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SOME AIMS OF AN ANESTHESIOLOGIST

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NEW YORK

Full and permanent recognition of the anesthesiologist as a practicing physician depends on the accomplishment of several major aims. Among these are an adequate supply of physicians competent to render complete service in anesthesiology to every patient, establishment of adequate education in this subject in all medical schools, dissemination of accurate information about the specialty, assumption of full responsibility by the anesthesiologist as a physician and the development of economic security for the practitioner.

The armed forces realize the value of the physician in this special practice. They have established special teaching centers where medical officers are being instructed to become the directors and teachers in the larger units.

Is there a place for anesthesiologists in the postwar plan? In 1941, of 5,700 hospitals reporting anesthesia services, only 2,750 had a physician in charge. If all doctors received basic instruction in this field, that situation would not exist.

The American Board of Anesthesiology has certified 233 physicians in the specialty. The American Society of Anesthetists has certified more than 200 of its 1,700 members as Fellows in Anesthesiology. It is self evident that there is an immense postwar opportunity in this field, which is definitely undermanned at present.

Basic teaching of the subject in all approved medical schools must be established. At present there are a few excellent active required junior and senior medical student courses being given. Others are listed but are inactive, and many schools do not provide courses in this subject. In war curriculums few interns receive sufficient clinical experience and still fewer any personally supervised instruction in this specialty. More approved residencies must be established in this field if the major aim of the anesthesiologist is to be realized. In order to obtain the proper educational facilities for this specialty, a genuine demand must be aroused. This can be done by individual and organized efforts to inform the medical, hospital and lay public of the many important and varied services available by the qualified anesthesiologist. Every medical graduate should receive sufficient basic instruction so that he may intelligently deal with problems in anesthesia. Such instruction is required for all medical students in England and Canada. This would eliminate the necessity of many hospitals having to rely entirely on a limited technical anesthesia service.

For economic reasons hospital managements have been too satisfied with the mere technical service of nonmedical employees. This deprives the patients of many valuable services. The nonmedical anesthetist who may have technical ability cannot practice medicine and thus cannot perform many of the duties of the anesthesiologist. Nominal supervision by a physician the graduate of a medical school giving no instruction in the basic principles of anesthesiology and of an internship giving meager clinical experience is a farce and a subterfuge. The anesthesiologist must be competent to direct, conduct and teach anesthesia in all its forms, including inhalation therapy and resuscitation. He must assume and accept full responsibility and maintain his professional integrity. There must be an intimate personal relationship between patient and anesthesiologist in the interest of safety, efficiency and responsibility.

The assumption of full responsibility and the maintenance of the personal relationship of doctor and patient require a type of remuneration in keeping with the private practice of medicine. The current practice of physician anesthesiologists accepting salaried positions with hospitals tends to impair the personal relationship and divide or remove responsibility. The status of the physician may then be reduced to that of a hospital employee, with loss of prestige, incentive to better work and freedom of action. His judgment may be regulated by economic rather than by medical concepts. Responsibility is of the utmost importance in medical practice. Those who shirk responsibility should not expect to enjoy the privileges, respect or rewards of the medical profession.

It is to be regretted that the federal government, in its effort to secure greater economic benefits for all, did not include this specialty in its postwar planning board. Efforts must be continued to secure proper representation there, so that relocation and logical distribution of qualified anesthesiologists may be assured. With the sociologic trend to greater social security, the status of the specialty has been placed in jeopardy. It is acknowledged that hospital service plans have benefited both the lay public and the physician. Hospital service and medical service are distinct and should so remain.

Organized anesthesiology can assist its members by its postwar planning committees, by establishing fellowships, research facilities, libraries and postgraduate refresher courses. It can establish and develop cooperation with the various educational, medical, surgical and hospital groups. It should be relentless in demand-

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ing adequate instruction in anesthesiology for every physician and suitable postgraduate instruction for the specialist. This education must extend from medical student days, through internship and residency. Organized anesthesiology must inform the medical, hospital and lay public that in striving for these aims its final goal is to provide competent, safe and efficient service in anesthesiology for every patient.

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DIAGNOSIS OF HERNIATION OF LUMBAR INTERVERTEBRAL DISKS BY NEUROLOGIC SIGNS

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A new concept of neurologic manifestations of herniation of lumbar intervertebral disks has been presented in two preceding publications,[1] which clarify the clinical interpretation of this condition. The practical application of this knowledge is important in the general practice of medicine, and a brief review with additional information is herewith presented.

Since the initial stimulating publication in 1934 by Mixter and Barr,[2] who demonstrated herniation of intervertebral disk by intraspinal injection of iodized oil and surgical exploration, there have been many contributions to the subject with increasing emphasis on the frequency of the lesion and localization by means of neurologic signs. There remained, however, lack of clear definition of the symptoms and signs of single nerve root compression by the common herniation of the nucleus pulposus of a lower lumbar disk. The symptoms caused by this herniation are those which in the past have been called "lumbago" and "sciatica," terms which now are recognized to have little meaning except general location of the pain.

Careful study of the history in cases of proved herniated disk rather constantly elicits the story of preceding episodes of "lame back," with or without a sudden "slip" sensation under stooping lifting strain. These attacks now are recognized to represent beginning softening and loosening of the nucleus pulposus within the disk, with posterior shift and stretch of the enclosing ligament (fig. 1). The patient has pain located in the lower lumbar region, usually not lateralized, although he may list to favor one side, and he cannot straighten his back well because of the pain.

Theoretically, this early posterior displacement of the nucleus pulposus within the disk should be replaceable by proper manipulation, as it has not yet herniated in sufficient degree to be fixed in its position. Actually, many of these nucleus pulposus dislocations have been replaced by various maneuvers under the guise of doing something else. The orthopedic surgeons have massaged and manipulated for "strained ligaments and myofascitis," neurologists have "stretched the sciatic nerve" and osteopaths and chiropractors have "replaced dislocated vertebrae" and "released pinched nerves," with some element of success in all measures. The reason for success in cases of herniated disk has been the occasional accidental replacement of the nucleus pulposus to its normal central position or the subsidence of acute inflammatory swelling and size of the herniation with passage of time.

A general physician, Dr. A. W. Abts,[3] recently reported to me, half apologetically, that "he was relieving by manipulation the great majority of patients who came to him with very sudden acute disabling low back pain which caused them to assume a trunk-thigh flexion deformity favoring the affected side. Pain is characteristically localized over the lower lumbar area and the symptoms are produced often by very slight provocation, such as stooping to pick up an article from the floor or stooping of any kind. The manipulation is done with the patient lying on his back, both legs extended (fig. 2). The first maneuver is to flex the leg acutely on the thigh and the thigh on the abdomen, at first cautiously a few times on the least affected side, then more suddenly and forcibly. The second maneuver is forceful full extension of the leg by combined kick of the patient and pull with the operator's hand on the ankle. This procedure then is repeated on the more affected side, repeating one to ten times as seems needed by report of relief by the patient. This is noted by the ease with which the patient can extend the leg on the table or can be determined more certainly by having the patient stand, when he can walk erect and is able to bend forward without pain. No support is needed for the patient who is treated the same day of the onset of symptoms, and he may resume work. The patient who is treated a few days after the onset has overlapping adhesive tape applied to the lower lumbar region and is advised against his usual activity for three or four days. This manipulation is not original, but the source by reference cannot be found at the present time." This manipulation would first open the posterior disk border, favoring restoration of the nucleus, and the sudden longitudinal jerk would widen the entire disk and tend to suck the partly herniated nucleus back to its normal central position. Other maneuvers might work as well, particularly if muscle relaxation were obtained by anesthesia. But manipulative treatment should be predicated on the assumption that the great majority of these sudden back "slips" with following lameness are posterior displacement of the nucleus pulposus and not other somewhat hypothetical pathologic conditions.

True herniation of the nucleus pulposus occurs when the enclosing annulus is ruptured and sufficient amount of fibrocartilage escapes through the opening beneath the posterior longitudinal ligament to produce an intraspinal tumor and pressure on a nerve root (fig. 3). This rupture may occur suddenly or gradually, the distinguishing sign being the appearance of definite unilateral nerve root compression symptoms, usually described by the patient as aching in the "hip" or superior midgluteal region and variable sharper pain radiating down the posterior thigh and calf, so-called "sciatic" pain.

Several factors are involved in this common nerve root compression by an intervertebral disk herniation. The rather constant location of the herniation on the posterior surface of the disk to one side of the midline, directly beneath an emerging nerve root, leads to early compression of a single nerve root. In most persons the spinal canal is considerably flattened or narrowed at the lumbosacral junction, which leads to earlier com-

From the Department of Surgery, Service of Neurological Surgery, University of Nebraska College of Medicine.

1. Keegan, J. Jay: Dermatome Hypalgesia Associated with Herniation of Intervertebral Disk, Arch. Neurol. & Psychiat. **50**: 67 (July) 1943; Neurosurgical Interpretation of Dermatome Hypalgesia with Herniation of Lumbar Intervertebral Disk, J. Bone & Joint Surg. **26**: 238 (April) 1944.

2. Mixter, W. J., and Barr, J. S.: Rupture of the Intervertebral Disk with Involvement of the Spinal Cord, New England J. Med. **211**: 210 (Aug. 2) 1934.

3. Abts, A. W.: Manipulation for Acute Lame Back, personal communication to the author.

pression here of the nerve root against the overlying ligamentum flavum and lamina. Some persons have a much larger spinal canal than others and may have many episodes of low back trouble without definite nerve root symptoms, as displacement of an unrestricted overlying nerve root is not likely to cause much nerve root pain. The nerve root is fixed laterally as it enters the intervertebral canal, and there is a tendency for the somewhat medial herniation to compress the nerve root in the narrow lateral angle of the spinal canal beneath a special lateral portion of the ligamentum flavum.

This part of the ligamentum flavum deserves a separate description and name, for it is not a part of the true ligamentum flavum between laminas but a deeper very dense ligament extending between the base of articular processes. In surgical exploration for herniation of the fifth lumbar disk (fig. 4) this ligament appears as a

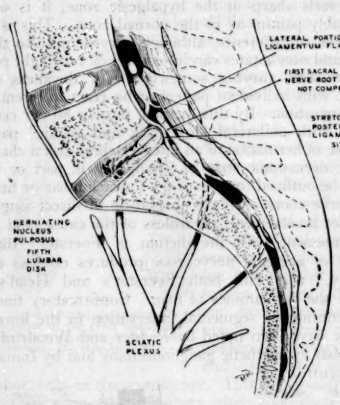


Fig. 1.—Early herniation of nucleus pulposus of fifth lumbar disk giving rise to low back pain without nerve root radiation.

deep lateral longitudinal band after the ligamentum flavum attached to the first sacral lamina has been removed. This deep ligament, with suggested name of "interarticular ligament," must be removed before adequate lateral exposure and decompression of the nerve root and herniation can be obtained.

The first and commonest complaint from nerve root compression by herniation of a lumbar intervertebral disk is pain in the "hip," the patient pressing deeply in the superior midgluteal region, over the sacroiliac ligament or hip joint. This common location of pain in low back syndromes has had various interpretations, the oldest being sacroiliac strain, which now is recognized to occur very rarely. It has been called the superior gluteal nerve syndrome, although this nerve is entirely motor. Lately myofascitis of the sacrospinalis and gluteal muscle attachments has been a popular diagnosis, or the pyriformis and tensor fasciae latae muscles have been blamed. These rather hypothetical explanations have not been very well proved and have not well explained the later radiation of pain down the leg, for which the assumption of reflex pain or sciatic neuritis had to be added. In view of our present knowledge of the sequence in herniation of an intervertebral disk, the most logical explanation for this "hip" or superior midgluteal pain is the first sensory contact of the posterior primary division of the compressed nerve root against the overlying ligamentum flavum. The sensory distribution of this nerve division is to the gluteal area subjectively involved. The motor portion of the root lies anteriorly against the herniation, while the central part of the root is formed by sensory fibers for the anterior primary division to the leg (fig. 3).

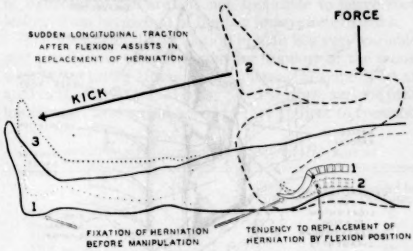


Fig. 2.—Manipulation for reduction of early herniation of the nucleus pulposus of a lower lumbar intervertebral disk (used by Dr. Abts).

Greater compression of the nerve root involves the anterior primary division which joins four other roots to form the great sciatic nerve and supply sensation to the lower extremity (fig. 5). It should be emphasized that each of the five roots forming the sciatic nerve represents a segmental sensory and motor distribution which is arranged in serial order as the dermatomes of the trunk. The difficulty in the leg is that this order of distribution is obscured by the extension and rotation of the leg in limb bud development and the fusion of the nerve roots in the sciatic plexus which makes single

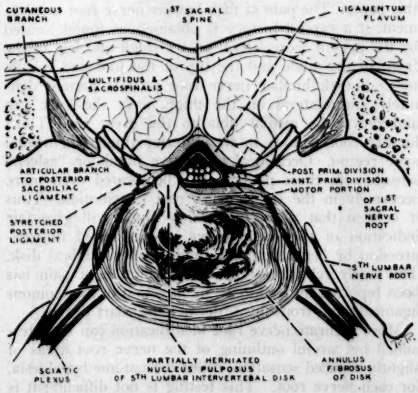


Fig. 3.—Partial herniation of nucleus pulposus of intervertebral disk, with rupture of annulus fibrosus, stretch of posterior longitudinal ligament and compression of single nerve root, causing low back and nerve root pain.

root dissection to areas of skin and muscle impossible. This has led to confusion and a tendency to think and speak in terms of peripheral nerves instead of nerve roots to the extremity.

The great sciatic nerve, supposedly involved in "sciatica" or "sciatic neuritis," supplies sensation to a

large area of the lower extremity which includes the entire foot and most of the leg below the knee (fig. 6). It is not likely that a true sciatic neuritis would select only one portion of this nerve and cause pain which is distributed only down the back of the thigh and calf and lateral ankle and foot, as is the usual location in so-called

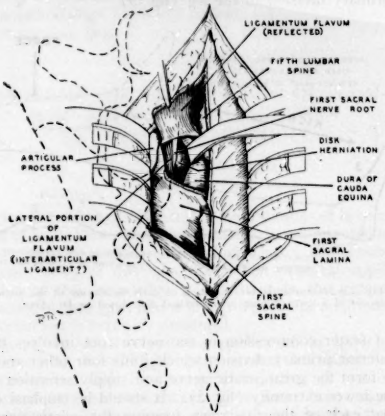
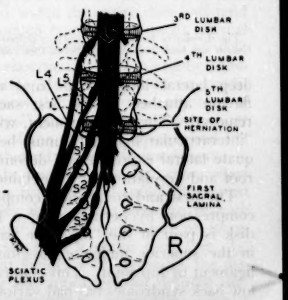


Fig. 4.—Surgical view of fifth lumbar disk herniation to show special lateral portion of ligamentum flavum. The first sacral nerve root lies beneath this ligament.

"sciatica." This distribution rather accurately is that of the first sacral nerve root, as proved in 72 cases of operation for herniated fifth lumbar intervertebral disk, reported in previous articles [1] and shown in figure 7 of this paper. The pain of fifth lumbar nerve root involvement, if a careful history is obtained, is found located by the patient more lateral on the thigh and leg, to the front of the ankle and the top of the foot and middle toes. Fourth lumbar nerve root pain is located definitely anterolateral on the thigh, over the knee cap and down the medial tibia to the great toe. Third lumbar root pain is to the anterior thigh and medial knee region. Occasional subjective numb or "asleep" sensation in these patients will be located even more accurately in the single nerve root distribution. Thus it is seen that a careful history alone will give fair indication of the single nerve root involved in compression by herniation of a lumbar intervertebral disk. This fairly reliable segmental distribution of pain has been reported by Kellgren [4] by injection of interspinous ligaments and from this a dermatome chart drawn.

More accurate nerve root identification can be determined by careful outlining of the nerve root areas of slightly reduced sensation, called dermatome hypalgesia, for each nerve root. This testing is not difficult; it is done by simple light pin scratch or prick which the patient identifies as differing degrees of sharpness, not numbness. First the dermatome area suspected by the pain distribution is tested and compared with the similar area on the other leg and with other areas on the same leg, usually best in the calf or on the foot. A report of "not quite so sharp" identifies the hypalgesic area. The pin scratch then is passed lightly from this area around the leg or foot until the patient reports by signal a definitely sharper area, which point is marked with ink. By repeating this procedure up and down the lower extremity a definite and constant dermatome pattern will be outlined by the patient, usually corresponding to one root of the dermatome chart presented in figure 7. The patient's almost startled response to increased pain at the border line is striking, even when there may be some question of difference when the pin is stroked independently in the different areas. The border reaction almost seems like hyperalgesia, but passing the pin in the opposite direction from the normal to the hypalgesic zone rarely elicits any increased pain reaction at the transition line. When the patient is asked to describe the difference in sensation in the hypalgesic and normal zones he usually states that, while the pin feels sharp in the hypalgesic zone, it is not disagreeably painful as in the normal zone. This is a fine degree of difference, although very definite to the patient, and necessitates careful control of very light pin point pressure, varying somewhat with thickness of skin and with individual patients who react differently to pain sensation. By this method, in over 80 per cent of cases with unilateral "low back and sciatic" pain suggestive of herniation of an intervertebral disk a characteristic dermatome strip of hypalgesia, in part or in full, can be outlined for one of the lower lumbar or first sacral nerve roots. This is diagnostic of direct single nerve root involvement, regardless of the cause, and is in disagreement with the dictum of Foerster [5] that "division of a single nerve root produces no loss of sensibility," and with both Foerster's and Head's [6] charts of the dermatomes of man. Confirmatory findings of continuous segmental innervation in the lower extremity have been noted by Richter and Woodruff,[7] with lumbar sympathetic ganglionectomy and by Inman and Saunders [8] from the "sclerotomes" in deep tissue pain reaction.

The nerve root most commonly compressed by a herniation of an intervertebral disk is the first sacral root by the fifth lumbar disk. There is varying opinion as to this frequency, most reports of large series of proved cases placing the figure over 50 per cent. In my series of 243 lumbar dermatome hypalgesia cases 145, or 59.7 per cent, were of first sacral nerve root distribution, 74 of them proved by operation, in comparison to 66 cases, or only 27.1 per cent, of the fifth lum-



DRAWING OVER ROENTGENOGRAM TO SHOW RELATION OF NERVE ROOTS TO LOWER LUMBAR DISKS

Fig. 5.—Drawing over a roentgenogram to show the relation of the five nerve roots of the great sciatic nerve to intervertebral disks and vertebrae.

4. Kellgren, J. H.: On the Distribution of Pain Arising from Deep Somatic Structures with Charts of Segmental Pain Areas, Clin. Sc. **4**: 33 (June) 1939.

5. Foerster, O.: The Dermatomes in Man, Brain **56**: 1 (March) 1933.

6. Head, H., and others: Studies in Neurology, London, Oxford University Press, 1920.

7. Richter, C. P., and Woodruff, B. G.: Changes Produced by Sympathectomy in the Electrical Resistance of the Skin, Surgery **10**: 957 (Dec.) 1941.

8. Inman, V. T., and Saunders, J. B. M.: Referred Pain from Skeletal Structures, J. Nerv. & Ment. Dis. **99**: 660 (May) 1944.

bar root, 26 cases, or 10.7 per cent, of the fourth lumbar root and 5 cases, or 2.1 per cent, of the third lumbar root, as shown in the table. This great predominance of the first sacral nerve root syndrome is in agreement with the observation both by patients and by physicians that the commonest location of pain called "sciatic" is down the posterior thigh and calf to the lateral ankle and foot, which accurately describes the first sacral nerve root distribution (fig. 7).

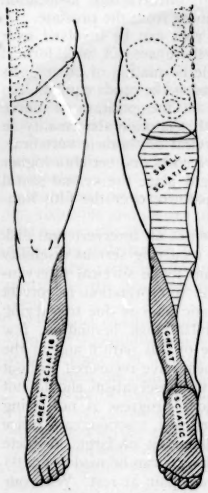


Fig. 6.—Peripheral sensory distribution of the great sciatic and small sciatic nerves in the lower extremity. (Gray's Anatomy.)

Since the first sacral nerve root is so commonly affected in herniation of the fifth lumbar intervertebral disk, it is well to keep in mind some anatomic points of this region, which explain many peculiarities of this involvement (fig. 5). The first sacral nerve root is rather long in its extradural course within the spinal canal, measuring 3 to 4 centimeters in length. It leaves the main dural canal above the fifth lumbar disk and courses well lateral in the flattened spinal canal of the first sacral region. The sensory ganglion of the root lies beneath the first sacral lamina below the disk, and hence herniation compresses the nerve root proximal to the sensory ganglion and distal to the motor ganglion cells in the spinal cord. This fact is significant in regeneration of root fibers after root destruction by compression. Motor regeneration may be expected to occur unless an obstructive nerve root fibrosis has developed, but sensory regeneration may not occur, as this interruption is proximal to the ganglion and cannot be guided by nerve sheath after it enters the spinal cord.[9] An excellent example of this was in a case with large fifth disk herniation which compressed three nerve roots and caused wide sensory loss and foot drop. Eighteen months after the herniation had been removed and the nerve roots decompressed there was complete return of motor function in the foot but only partial recovery of sensation. At operation a completely compressed or dead nerve root can be identified by the absence of motor response in the leg to stimulation by pinching or the faradic current.

Another anatomic peculiarity of nerve root compression by herniation of lumbar disks is the absence of so-called trophic manifestations in the distribution of the root, as occurs when peripheral nerves are subject to chronic irritation. There is no hyperalgesia, no burning sensation, no alteration of circulation or temperature, no disturbance of sweating. It is fairly well established that these phenomena, commonly called trophic or causalgic, are related to sympathetic innervation and can be relieved in considerable degree by sympathectomy.[10]

There is no outflow of preganglionic sympathetic fibers in the spinal roots below the second lumbar root level[11] (fig. 8); hence the common compression of these roots by herniation of lower lumbar intervertebral disks does not affect sympathetic innervation in their distribution. For this reason the diagnostic reduction of electrical conductivity on the skin of interrupted peripheral nerves,[7] which is largely dependent on sympathetic loss of sweating in the area, is not applicable to nerve root lesions from herniation of lumbar intervertebral disks.

The lumbosacral articulation in man is a very variable and poorly constructed region for support of the trunk with heavy lifting strain. The lumbosacral spine is set at a 20 to 80 degree angle on the tilted sacrum, and the fifth lumbar and first sacral vertebrae are subject to common

Distribution of Cases with Dermatome Hypalgesia

Dermatome	No. of Cases	Per Cent	Verified by Operation
Third lumbar	5	2.1	0
Fourth lumbar	26	10.7	12
Fifth lumbar	66	27.1	28
First sacral	145	59.7	74
Second sacral	1	0.4	1
Total	243	100.0	115

anatomic defects such as bifid spines and transitional types of vertebrae, with large and at times articulated transverse processes, variably faced articular facets, and occasional defective pedicles of the laminal arch, leading to spondylolisthesis. Because of these many structural variations and weaknesses, much lumbosacral pain has been attributed to them and spine fusion operations done for better stabilization, without careful consideration

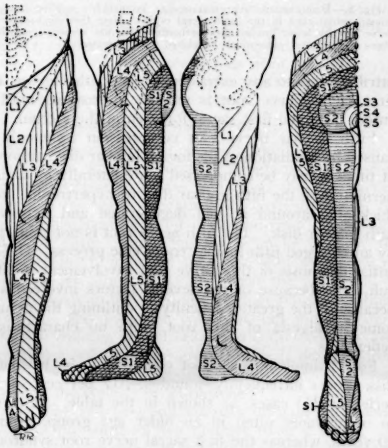


Fig. 7.—Composite dermatome chart of the lower extremity determined by outlining the area of hypalgesia from herniated disk compression of a single nerve root.

of the diagnosis of the common herniation of the fifth or fourth lumbar disks. When unilateral nerve root pain, reflex loss and dermatome hypalgesia appear as

9. Young, J. Z.: The Functional Repair of Nervous Tissue, Physiol. Rev. **22**: 318 (Oct.) 1942.
10. Livingston, W. K.: Pain Mechanisms: A Physiologic Interpretation of Causalgia and Its Related States, New York, Macmillan Company, 1943.
11. Foerster, O.: Operativ-experimentelle Erfahrungen beim Menschen über den Einfluss des Nervensystems auf den Kreislauf, Ztschr. f. d. ges. Neurol. u. Psychiat. **167**: 439, 1939.

the main feature of the complaint, it is necessary to relate the pathologic condition directly to an involved nerve root on that side. This is particularly true when the back pain has disappeared, owing to complete herniation of the nucleus pulposus through the posterior longitudinal ligament, as often occurs in late cases (fig. 9). When the first sacral nerve root syndrome appears, with loss of ankle jerk, it is impossible to

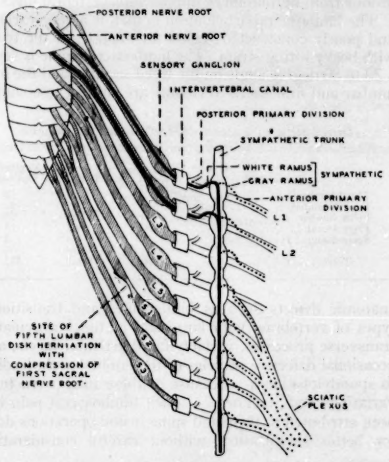


Fig. 8.—Diagrammatic representation of sympathetic outflow from the human spinal cord in the lumbosacral region. Note that compression of nerve root by lower lumbar disk herniation does not involve sympathetic fibers to the lower extremity. (Modified from Foerster.)

attribute this to any extraspinal bone pathology, as the first sacral nerve root is entirely intraspinal until it enters the fixed first sacral foramen of the sacrum.

Fifth lumbar nerve root compression commonly is caused by herniation of the fourth lumbar disk, although at times it may be compressed more laterally by a wide herniation of the fifth lumbar disk or hypertrophic bone thickening around an old degenerated and narrowed fifth lumbar disk. The fifth nerve root is not contacted by an enlarged fifth lumbar transverse process. Differential diagnosis of this nerve root involvement is difficult, both because of the several factors involved and because of the greater difficulty in outlining the dermatome hypalgesia of this root, with no characteristic reflex loss.

Fourth lumbar nerve root compression by herniated disk occurs infrequently, found in 10.7 per cent of my series of 243 cases, as shown in the table. It seems to occur more often in an older age group, around 50 years, whereas the first sacral nerve root syndrome is more common in the late thirties and the fifth lumbar nerve root syndrome in the forties, with exceptions in all groups. The fourth lumbar nerve root may become involved in the intervertebral canal from lateral herniation of the fourth disk, where the pathologic condition may be missed at operation. In such a case with the characteristic fourth root syndrome of dermatome pain and hypalgesia, absent knee jerk and failure of the leg muscles to jerk on pinching the fourth lumbar nerve root at operation, section of the sensory portion of this nerve root may be warranted to relieve the pain satisfactorily.

Third lumbar nerve root involvement is not often associated with herniated intervertebral disk but is more likely to be involved in the common lateral hypertrophic bone disease of this region, old fracture dislocation interference or metastatic cancer from the prostate.

The second sacral nerve root can be involved over a sixth lumbar disk when there are six well formed lumbar vertebrae, or by wide herniation of other disks which compress medial nerves of the cauda equina. An occasional variation occurs in the position of nerve roots, usually associated with anatomic abnormality in the form or sequence of cervical or thoracic vertebrae, which places the sciatic nerve roots one vertebra higher than the rule and hence might place the second sacral nerve root, by dermatome pattern, over the fifth lumbar disk.

The treatment of herniation of an intervertebral disk should be conservative until recurring serious disability or continuing intolerable pain make surgical intervention seem necessary. If the interpretation is correct that most low back and sciatic pain is due to varying stages of intervertebral lumbar disk herniation, few persons escape some episode of this nature and in the past the great majority of them have recovered without disk surgery. However, ultraconservatism should not be practiced when satisfactory progress is not being made after a few weeks of bed rest, traction, cast, brace or belt, or when a clear diagnosis of large complete herniation of the nucleus pulposus can be made (fig. 9) based on continuing nerve root pain at rest. With our present knowledge and surgical technic of herniated disk it is possible to relieve this patient immediately of his leg pain and enable him to walk out of the hospital in comfort two weeks or less from the operation, without back support and able to resume work two to six weeks later. There is no great risk to the operation, as the disk herniation can be removed by retraction of the sacrospinalis muscle and removal of the liga-

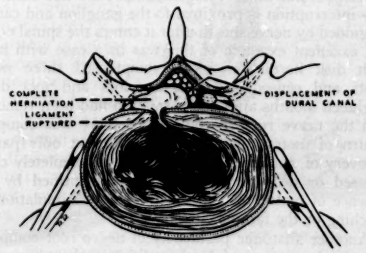


Fig. 9.—Complete herniation of nucleus pulposus with rupture of posterior longitudinal ligament. This herniation is not reducible and is diagnosed by disappearance of low back pain and increase of nerve root pain at rest.

mentum flavum on only one side of the spine (fig. 4). Usually some bordering lamina is removed for better exposure and adequate decompression of the nerve root. This does not significantly alter the supporting structure of the back; in fact, the scar tissue of healing may serve for better fixation of an unstable back. The main part of the disk or annulus remains in place. However, a person, usually in his late thirties, who

has developed herniation of a lumbar intervertebral disk should recognize that he has reached middle age and should always protect his back from heavy stooping lifting strain. This advice applies whether he has developed herniated disk or not. The operation should not be expected to give rejuvenation or restore a pathologic disk to normal.

SUMMARY

The terms "lumbago" and "sciatica" have little meaning except to indicate the general location of pain.

The early stage of lumbar intervertebral disk herniation is not distinguishable from other pathologic conditions supposed to cause low back pain.

Posterior displacement or partial herniation of the nucleus pulposus within the disk often is reducible by manipulation.

More extensive herniation of the nucleus pulposus is not reducible and causes unilateral pressure on a nerve root within the spinal canal, with pain radiating in that nerve root distribution.

The nerve root is compressed beneath a special lateral portion of the ligamentum flavum (interarticular ligament?).

The most constant location of nerve root pain in the "hip" or midgluteal region is explained by the first sensory contact of the posterior primary division of the root against the ligamentum flavum.

The pain of true "sciatic neuritis" should be located in the entire distribution of the great sciatic nerve and not limited to the posterior thigh and calf and lateral ankle and foot. This common location of so-called "sciatic" pain represents first sacral nerve root distribution.

The location of pain of fifth, fourth or third lumbar nerve root compression can be distinguished from first sacral nerve root pain if a careful history is obtained.

More accurate identification of nerve root involvement can be obtained by careful outlining of areas of slightly reduced pain sensation or dermatome hypalgesia.

Recognition of the commonest first sacral nerve root syndrome with herniation of the fifth lumbar intervertebral disk removes most other pathologic findings as a possible cause of this syndrome.

Motor regeneration of compressed intraspinal nerve roots would be expected to occur more completely than sensory regeneration because of the location of the compression proximal to the sensory ganglion.

The absence of trophic or sympathetic phenomena with lower lumbar nerve root compression is explained by the absence of sympathetic fibers in these roots below the second lumbar root level in man.

Signs of organic loss of nerve root function, by the finding of sensory or reflex loss, necessitates the location of causative pathologic changes directly on that nerve root and does not permit the interpretation of reflex pain from some distant region.

Treatment of herniation of an intervertebral disk should be conservative until seriously disabling and persisting or recurring pain gives indication that a fixed herniation is present.

The operation for herniation of a lumbar intervertebral disk is comparatively safe and does not weaken the supporting structure or function of the back.

Relief by operation should not be postponed an unreasonable length of time, for the nerve root pain is immediately relieved and the patient able to be back on his feet in comfort in less then two weeks.

1234 Medical Arts Building.

PHYSICAL FITNESS TESTS FOR CONVALESCENTS

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The Air Surgeon directed the activation of a convalescent training program for patients in Army Air Forces hospitals in December 1942.[1] The general objective was to use the hospital days of every clinically available patient for military education and for complete physical rehabilitation, so that on discharge the soldier would have additional training and be prepared physically for full military activity without danger of relapse and without any substandard duty. The hospitalization required by his illness would thus become also a physical and mental educational period. The introduction of physical training in the convalescent training program of the Army Air Forces hospitals produced a revolutionary change in the management of patients.[2] Whereas heretofore the convalescents merely vegetated in idleness, efforts are now made to maintain and even increase the degree of their physical fitness. Practical questions soon arose: When was it safe and beneficial for patients hospitalized for acute infectious diseases to take part in the physical training program and When were they ready for discharge from the hospital to full activity? To answer these questions the present study was undertaken. It was conducted between Jan. 10 and May 15, 1944 on 417 aviation cadets and students who were patients of the Medical Service in the AAF Regional Hospital, San Antonio Aviation Cadet Center, recovering from primary atypical pneumonia, influenza, nasopharyngitis, tonsillitis and other upper respiratory infections.

CLINICAL PHYSICAL FITNESS TESTS

Since the convalescent physical training program is divided into ward and outdoor programs, it was considered desirable to devise three tests for (1) participation in the ward program, (2) participation in the outdoor program and (3) discharge from the hospital to active duty. These tests were to be used by the medical officer, in much the same way as laboratory tests, to aid him in deciding when the patient is fit to participate in the ward and outdoor physical training programs and when he is fit for full military duty. Physical training for convalescents is divided into three programs: red, blue and green. This is done in order to insure gradual progression in the intensity of exercise and the amount of work done:

(*a*) The red program consists of mild calisthenics given in the ward for ten minutes twice a day.

(*b*) The blue program consists of calisthenics, games, a moderate amount of running, combatives and guerrilla

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Assistance in conducting this investigation was given by Lieut. Edwin C. Womble, M. C., and Private Max J. Talaska of the AAF Regional Hospital, San Antonio Aviation Cadet Center, San Antonio, Texas.

1. Rusk, H. A.: Army Air Corps' New Convalescent Program, J. Indiana M. A. **36:** 127 (March) 1943.
2. Air Surgeon's Convalescent Program, editorial, J. A. M. A. **125:** 561 (June 24) 1944.

exercises. It is scheduled outdoors twice daily, one period being thirty minutes and the other forty-five minutes.

(*c*) The green program includes all the activities of the blue one, to which wind sprints and cross country running are added. It is given twice daily, each period being forty-five minutes.

This daily exercise program is the active factor in conditioning the patient for return to duty. The physical fitness tests determine the progress of the patient toward this goal.

The tests used in the present study were called the red test, the progressive test and the discharge test. During the first part of this study the red and progressive tests were given by members of the investigating staff, but later these tests were administered by the nurses in their respective wards. The nurses learned the technic of the tests quickly and conducted them efficiently. The time consumed did not interfere with their other duties. The discharge test was given by the physical training instructors assigned to the convalescent training program.

The Red Test.—The red test was used to determine when the patients could participate in the red program. In the construction of this test the simplest possible form was used. The test consisted in stepping up and down,[3] as in the Harvard step-up test,[4] on a 20 inch box, twelve times in thirty seconds. The sitting pulse rate was taken for thirty seconds, beginning one minute after exercise. Pulse rates of less than 100 per minute were considered passing. After a patient passed the red test he was automatically placed on the red program. If he failed, he was retested on succeeding days until he either passed or was finally placed on the red program without passing, if the ward officer felt that the patient would not be harmed by additional physical activity.

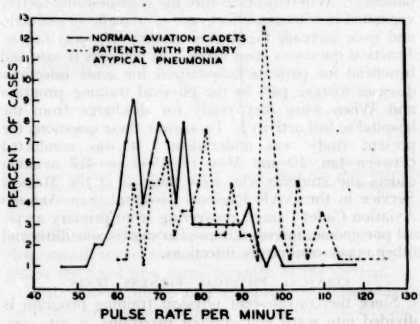

Chart 1.—Pulse rate one minute after red test.

In devising the red test, three factors were considered: (1) rise in metabolism, (2) change in pulse rate and (3) degree of muscular coordination. Although it is logical to suppose that the reserve of physical endurance of a hospitalized patient is lowered, yet during the testing it soon became obvious that the reserve was greater than the demand imposed by the red test. This supposition was substantiated on numerous occasions when patients passed a five minute step-up test on the same day or the day after the red test was passed. However, the work accomplished during the red test is approximately equivalent to work done in brisk walking up to the third story of an ordinary building and down again in thirty seconds. It is hard to believe that many medical men would be willing to give more intensive exercise to patients who have just passed the acute stage of illness. As a matter of fact, at the beginning of this study suggestions were made to use only five steps; a decision was made on ten steps; the number was later extended to twelve.

In determining the intensity of the red test, the relation between the comparative rates of metabolism during the planned exercises and the proposed test was considered. Although the oxygen consumption during the exercises of the red program was not actually measured, an estimate of the rate of metabolism was made on the basis of research done by other investigators. According to Kennedy [5] the metabolism of all exercises given to the British army varies from five to six and one-half times the basal rate; Missiuro and Perlberg [6] found that the increase in metabolism during Scandinavian gymnastics is four and one-half times the basal. The ward exercises used in the red program are between the British and Scandinavian in intensity. Laboratory determinations showed that the red test increases the metabolic rate eight to ten times over the basal. For this reason it was considered that exercises of lower intensity, such as those in the red program, could be indulged in for even a longer duration, especially since the patient could slow down or stop if he found the exercise too severe for him. Therefore it seemed unnecessary to have a more strenuous test to determine when a patient could enter this program.

In order to establish a criterion for the evaluation of the heart rate reaction, the red test was given to 98 normal aviation cadets from the preflight school and to 78 patients convalescing from primary atypical pneumonia. The frequency distributions of pulse rates one minute after exercise for both groups are given in chart 1.

The curve for the convalescents (chart 1) shows a pronounced shift to the right. Analysis of both curves shows that, if the pulse rate of 94 is taken as the criterion for passing, then 32 per cent of all patients convalescent from primary atypical pneumonia fail to pass the test. Experiments with patients who had a pulse reaction of 96 and 98 showed that they could take ward exercises as easily as the other patients with lower pulse reactions. For this reason, and in order to reduce the possible number of normal people falling into the "pathologic" group, pulse rates of less than 100 per minute were considered passing. By doing so, the number of normal cadets who would have fallen into the "pathologic" group was reduced to 3 per cent.

Stepping in cadence on a box 20 inches in height requires definite muscular coordination. It was observed that patients who had remained in bed continuously for several weeks could not maintain the cadence. Their movements were uncoordinated and their legs were shaky. This lack of coordination in

3. The subject stands in front of the bench and steps up on it with one foot and then the other, then stepping down in the same order; he must lead with the same foot on each step.

4. Johnson, R. E., and Robinson, S.: Selection of Men for Physical Work in Hot Weather, Report 16, Committee on Medical Research of the Office of Scientific Research and Development, Harvard Fatigue Laboratory, Feb. 15, 1939.

5. Kennedy, T. F.: Report on an Investigation of Energy Expended on the Exercises of the Physical Training Tables for Recruits of All Arms, J. Roy. Army M. Corps **61**: 108, 1933.

6. Missiuro, W., and Perlberg, A.: Untersuchungen über dem Einfluss der Gymnastikstunde auf dem Gastoffswechsel, Arbeitsphysiol. **17**: 62, 1934.

itself, regardless of the pulse reaction, was sufficient indication that the red test was too strenuous for these patients.

Progressive Test.—The day after the patient passed the red test, with the consent of the ward officer, he was given a more strenuous step-up test, called the progressive test, which was used to determine whether a patient was qualified to participate in either the blue or the green program. This test is essentially the Harvard step-up test except that the rate of stepping up is reduced from 30 steps per minute to a slower rate because it was observed that some patients were unable to maintain the faster rate. The test consisted in stepping up on the same 20 inch box and down again at the rate of 24 steps per minute and was continued to the limit of the patient's endurance, but not to exceed five minutes. The sitting pulse rate was taken for a period of thirty seconds beginning one minute after exercise. If, during exercise, the patient showed pronounced symptoms of fatigue he was stopped by the nurse and the pulse rate was taken as usual. By way of comparison this test, when completed, required ten times as much work as the red test and is equivalent to walking up to the twenty-first floor of a skyscraper (allowing ten feet per floor) and down again in five minutes.

TABLE 1.—*Scoring Table for Progressive Test*

Convalescent Training Program

Duration of Exercise	Pulse Rate One Minute After Exercise	Physical Training Classification
Below 2 minutes	Regardless of pulse rate	Red
2 minutes to 2 minutes 29 seconds	Below 100	Blue
	Above 100	Red
2 minutes 30 seconds to 2 minutes 59 seconds	Below 130	Blue
	Above 130	Red
3 minutes to 3 minutes 29 seconds	Below 100	Green
	100 to 140	Blue
	Above 140	Red
3 minutes 30 seconds to 3 minutes 59 seconds	Below 110	Green
	110 to 170	Blue
	Above 170	Red
4 minutes to 4 minutes 29 seconds	Below 130	Green
	Above 130	Blue
4 minutes 30 seconds to 4 minutes 59 seconds	Below 140	Green
	Above 140	Blue
5 minutes	Below 150	Green
	Above 150	Blue

An attempt was made to assign patients to the blue or green physical training programs on the basis of this test. The following criteria were used: (1) duration of the exercise, (2) pulse rate one minute after exercise, (3) muscular coordination of the patient during stepping up and (4) amount of dyspnea.

The progressive test was given to 100 normal aviation cadets, and it was observed that pulse responses resembled those obtained in the Harvard step-up test. For this reason the modified Harvard scoring table (table 1), based on pulse response and duration of exercise, was used in scoring this test also. In accordance with the score made by the patient, he remained on the red program or was moved either to the blue or to the green program (table 1). Only 15 out of 250 patients tested did not graduate into the green program the first time they took the progressive test. These 15 were placed in the blue group and passed into the green group within one or two days.

According to the plan of the investigation the progressive test was to be given the day after the red test. However, on some occasions it was given either on the same day or several days after the red test. Results indicate that within five days after passing the red test 83 per cent of the patients passed into the green test and 92 per cent passed into either the blue or the green physical training programs. These figures should not be interpreted as an indication of the maximum percentage of the patients who could have passed the test, because not all of them were tested on these days, either because of administrative lag or because the ward officers did not think the patients were ready to be tested. The fact that so few men failed to enter the green physical training program, even when it was taken as early as the second day after the red test was passed, suggests that the amount of work done in the red test could have been increased and that fears regarding the possible harmful effect of the present red test were unfounded.

Discharge Test.—Before this investigation started, the Medical Service of the hospital was using the regular Harvard step-up test [3] to determine when patients were physically fit to be discharged from the hospital to full military duty. Patients who received a score of 75 or more were discharged. Those who made lower scores were kept on the green program until they could pass the test.

Although the Harvard test has a low correlation with the AAF Physical Fitness test,[7] it was used for the reason of expediency. The weather during the period of investigation was unsettled and it was impossible to schedule the shuttle run required in the AAF Physical Fitness test. However, a follow-up of 271 patients discharged with the Harvard score of 75 was made by the physical director of the hospital and it was found that none of the patients relapsed and that they were able to carry on full military training involving strenuous physical exertion.

Results.—An attempt was made to find the relationship between the duration of fever, the time of entering the red and green programs and passing the Harvard test, and the length of hospitalization. For this purpose the data on patients convalescing from primary atypical pneumonia are presented in chart 2.

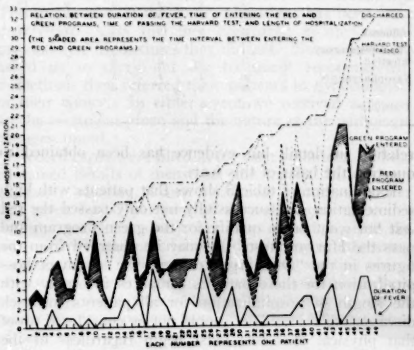
RELATION BETWEEN DURATION OF FEVER, TIME OF ENTERING THE RED AND GREEN PROGRAMS, TIME OF PASSING THE HARVARD TEST, AND LENGTH OF HOSPITALIZATION
(THE SHADED AREA REPRESENTS THE TIME INTERVAL BETWEEN ENTERING THE RED AND GREEN PROGRAMS)
DISCHARGED
HARVARD TEST PASSED
GREEN PROGRAM ENTERED
RED PROGRAM ENTERED
DURATION OF FEVER
DAYS OF HOSPITALIZATION
EACH NUMBER REPRESENTS ONE PATIENT

Chart 2.—Study of primary atypical pneumonia.

Each number on the abscissa represents a patient. Cases are arranged according to the length of hospitalization. Only patients who took all tests are included. This chart shows that there is no relationship between the duration of fever and the length of hospitalization. It also reveals that the earlier the patient was given the

7. The AAF Physical Fitness test consists of sit ups, pull ups and a 300 yard shuttle run.

red test, the earlier he was able to enter the green physical training program (see the solid area, chart 2). Yet on many occasions the Harvard test was delayed for a number of days because, in the opinion of the ward officer, the patient was not ready for the test. This indicates a discrepancy between the clinical opinion and the actual physical fitness of the patient as revealed by the test. These statements regarding pneumonia cases are applicable to patients convalescing from the other diseases mentioned in this report (table 2).

Some of the medical officers thought that testing and exercising might increase the sedimentation rate and, as a result, cause a relapse, or that the lung conditions in the case of respiratory diseases might be aggravated. It is outside the scope of this study to investigate this

TABLE 2.—*Statistical Data on Progress in Convalescence in Various Diseases*

	Primary Atypical Pneumonia, Mean	Nasopharyngitis, Mean	Influenza, Mean	Upper Respiratory Infection, Mean	Tonsillitis, Mean
Days of fever	2.2	2.6	2.5	3.1	2.5
Day red program entered	7.1	5.0	6.9	4.8	4.4
Day green program entered	9.3	6.5	8.3	6.5	5.4
Day Harvard test passed	13.8	9.2	11.8	8.7	7.7
Day of discharge	17.4	11.3	14.2	9.9	8.8
Number of cases	71	128	19	13	34

TABLE 3.—*Relationship Between the Sedimentation Rate of Red Blood Corpuscles and Physical Fitness*

			Day of Hospitalization				
Diagnosis	Subject Number	Sedimentation Rate	Sedimentation Rate Tested	Red Program Entered	Green Program Entered	Harvard Test Passed	Discharged
Primary atypical pneumonia	1	29	2	2	—	12	22
	2	33	2	2	3	7	8
	3	38	2	2	3	9	12
	4	55	5	5	—	16	17
Influenza	5	27	9	10	13	15	15
Upper respiratory infection	6	24	3	3	5	7	7
Nasopharyngitis	7	30	4	4	5	6	7
	8	29	5	5	6	7	8
Tonsillitis	9	41	5	—	5	6	8

relation in detail, but evidence has been obtained to question the basis of this fear.

Examination of table 3 shows that patients with high sedimentation rate successfully not only passed the red test but went on to qualify for the green program and pass the Harvard test. As may be observed from the figures in the "Discharge" column, the length of hospitalization for these patients compares favorably with the length of hospitalization for all patients for each disease (table 3). This should not be considered proof that physical exercises must begin regardless of the sedimentation rate. It merely shows that patients with high sedimentation rates can be given exercise without unduly prolonging hospitalization. Further investigation regarding the sedimentation rate is in process and the results will be presented in a separate report.

COMMENT

A highly debatable topic is the relationship between x-ray findings of the lungs in the case of primary atypical pneumonia and the time for starting physical exercises. The opinions of the medical officers who were contacted during this investigation varied, but the majority seemed to be against "early" exercises. The interpretation of the word "early" also varies a great deal. In the present study neither testing nor participation in the physical training program, notwithstanding positive x-ray findings, caused aggravation of symptoms or subsequent lengthening of hospitalization of the primary atypical pneumonia cases. However, chart 2 shows that there are long intervals of time in some cases between entering the green program and passing the Harvard test. This was usually due to the fear of the medical officer that the Harvard test would be harmful to the patient.

Hyperventilation of the lungs has been recognized as a therapeutic measure for lung atelectasis, and for this reason respiratory gymnastics of various kinds have been suggested. The desired amount of lung ventilation may easily be obtained by means of ward exercises of the proper intensity. This method may have an additional advantage over mere hyperventilation because the blood circulation through the lungs is also augmented.

It should be stated here that by the very nature of this study it was impossible to adhere strictly to a rigid plan. On many occasions the records are incomplete because some of the tests were omitted. The main reason for this was a deep rooted belief in the curative power of rest and a fear of early participation in physical exercises by convalescing patients on the part of both investigators and medical officers. However, with the progress of the present investigation this fear was reduced to a great extent and an earlier assignment of the patients to tests and physical training resulted. Before the present testing program was introduced at the San Antonio Aviation Cadet Center AAF Regional Hospital the average number of days of hospitalization of primary atypical pneumonia patients was 23.25. After the introduction of the testing the average dropped to 17.4 days. This difference is statistically significant; the critical ratio of the difference is 4.57. The objection may be raised that these patients belonged to two different calendar periods. The first group was hospitalized before Jan. 10, 1944 and the second after that date; therefore the virulence of the disease might have been different. It is the opinion of the investigators that improvement was not due solely to calendar difference, because it was observed that the earlier a patient was tested the sooner he was discharged from the hospital.

It is important to remember two factors in applying the results of this investigation: (1) The types of disease studied were of an acute nature and of comparatively short duration; (2) the patients, aviation students and cadets, represent a selected group possessing a high degree of physical fitness. For these reasons the results should be applied with caution to other personnel and to patients convalescing from other types of diseases. It is the opinion of all persons concerned with the active part of the investigation that no wholesale testing for admission to the red program is necessary. Patients recovering from diseases studied in this investigation may be safely placed on ward exercise on the second day of afebrility and then two days later may be placed on the blue or green program. In cases in which the medical officer is in doubt the red and progressive tests should be given to the patient, preferably in the presence of the medical officer.

The ward physical training program should be mild and the outdoor program should have sufficient gradation. With these conditions patients can safely take the whole physical training program. Occasionally muscle soreness may be encountered, but this should not be considered as an indication that the program is too severe.

It was observed that men with a high degree of physical fitness retain a high level throughout the disease. This observation supports the emphasis placed by the Army Air Forces on the importance of physical training for its personnel.

For enlisted men in duties not requiring a high degree of physical fitness, the physical fitness tests used in this study should be adjusted accordingly. The discharge test score of 75 and the five minute exercise limit may be too high.

During the present investigation an attempt was made to test the physical fitness of the patients by allowing them to use their own cadence and even rest when they wished. The total time allowed (including rest periods) was five minutes. The number of steps represented the score.

This type of testing was based on the desire to avoid too much "drive" on the part of the patient. It was observed that patients rapidly improved in willingness to perform step ups and were ready to take the Harvard test. This method of testing was discontinued because of the difficulty in standardization but may be useful in dealing with weak patients who need special care and should avoid strain.

CONCLUSIONS

1. From an analysis of table 2 it is found that three days after an acute fever of two and a half days' duration an AAF cadet can pass a physical fitness test equivalent to walking up to a height of 20 feet and down again in thirty seconds (approximately to the third floor of an average building).

2. One and a half additional days after fever, the convalescent cadet can pass a physical fitness test equivalent to climbing up 200 feet and coming down in five minutes (approximately to the twenty-first floor).

3. After three more days he can make a score of 75 on the Harvard test for discharge to full military duty.

4. The use of the Harvard test score of 75 is reliable for discharge to full duty, since all of 271 cadets were able to carry on without relapse.

5. Testing and participation in the physical training of the convalescent training program reduced hospitalization somewhat, definitely did not prolong illness and insured adequate physical fitness for return to full military duty.

6. From a small number of cases, results suggest (table 3) that sedimentation rate (Westergren method) of the order of 24 to 55 mm. is not a contraindication to full participation in the hospital physical training program.

SUMMARY

The clinical physical tests described were used to assist medical officers in classifying AAF cadets convalescing from acute, uncomplicated upper respiratory diseases for participation in a graded physical training program. Participation in the physical training program resulted in a sufficiently high degree of physical fitness for the return of the subjects directly to full military duty when discharged from the hospital.

THE VALUE OF PERIODIC PELVIC EXAMINATION

IN THE CONTROL OF CANCER OF THE UTERUS

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MARGARET C. STURGIS, M.D.
AND
FAITH S. FETTERMAN, M.D.
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One of the most important tasks confronting the medical profession today is to find cancer in an early and curable stage. Two methods are available. One is the method of educating the public with reference to the signs and symptoms of early cancer. The other is the method of periodic examination. The latter method is being tested in the Department of Gynecology of the Woman's Medical College of Pennsylvania.

In the spring of 1938 we undertook to determine the value of periodic pelvic examination in the detection of cancer of the cervix in an early and curable stage and in the detection of inflammatory lesions of the cervix which may predispose to cancer.

By means of appeals to our patients, to women's clubs, to nurses' auxiliaries, to social service agencies and to the public at large through the press, 1,319 volunteers were found. These were white women between 30 and 80 years of age. They were married or single, with or without children. They came from every walk of life. They were presumably well. They volunteered to come for examination twice a year for five years as a contribution to medical science.

Each volunteer was given a circular to be submitted to her family doctor. In this circular the purpose of the research was described. It contained statements to the effect that the examining physicians were volunteering their services and that if anything abnormal was discovered a report would be made to the family physician with recommendations for treatment. The cooperation of the family physicians has been most gratifying. As a rule they concurred in our recommendations. Sometimes they did not. Sometimes they asked us to carry out the treatment recommended. Sometimes they referred their patients to gynecologists of their choice. In either event we received a report on the treatment given and the nature of the pathologic changes found.

Record cards were filled in for each volunteer. These contained details of menstrual and marital history and of cancer heredity, if any. A family history of cancer was given by 42 per cent of the volunteers.

Only one serious objection was raised against the plan—namely, the possibility of developing or increasing a cancerphobia. Our experience has shown this objection to be unwarranted. Individual volunteers have repeatedly stated that instead of developing a fear of cancer the examinations have given them a "great sense of security."

Financial support for supplies, secretarial service and the salary of a research worker was furnished by generous grants from the Committee on Scientific Research of the American Medical Association, from the Pennsylvania Division of the Women's Field Army of the American Society for the Control of Cancer,

From the Department of Gynecology, Woman's Medical College of Pennsylvania.

Read before the Section on Obstetrics and Gynecology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

from the New York Medical Women's Association and from the International Cancer Research Foundation.

The examination was intentionally kept so simple that it could be duplicated by any physician at any crossroads of this country. It consisted of a careful bimanual examination and a careful inspection of the cervix in a good light.

In the first 2,000 examinations we used the Schiller test (Lugol's solution applied to the vaginal portion of the cervix). Eventually we gave this up, for we found it just as easy to detect diseased tissue without Lugol's solution as with it. Chrobak's test for friability of tissue was found useful in testing areas of papillary erosion. If the blunt tipped pocket probe pressed gently against the area slid off, we felt pretty sure we were dealing with a benign lesion. If the probe sank in, as it would into butter, a suspicion of malignancy was aroused. At first we performed quite a few biopsies. Later we preferred to recommend excision of the entire eroded area. By this means all of the diseased tissue could be sent to the pathologist and the cervix was restored to a healthy condition.

TABLE 1.—*Visits Made by Volunteers*

Number of Visits	Number of Volunteers
1	1,319
2	1,167
3	1,103
4	1,043
5	992
6	941
7	814
8	724
9	592
10	416
Total visits	9,111

Up to May 15, 1944 a total of 9,111 pelvic examinations had been made. Some 416 volunteers had come regularly twice a year for five years, while some 545 volunteers had more or less intermittently completed the five year period. Since January 1942 the breasts have been examined also.

In the course of these 9,111 examinations, eighteen cancers of ten different organs were discovered by us or reported to us. Table 2 shows how these are classified.

TABLE 2.—*Cancers Occurring in a Five Year Research*

	Discovered	Reported
Uterine cervix	4	
Uterine body	1	1
Ovary	1	
Breast	3	
Colon	..	2
Hip	..	1
Hypernephroma	..	1
Lymphosarcoma	..	1
Pancreas	..	1
Parotid gland	1	
Skin	1	
	11	7
Total cancers	18	

In the first examination of the 1,319 volunteers, early cancer of the cervix was discovered three times. The details of these cases are as follows:

CASE 1 (volunteer 430).—C. L., single, aged 39, had had one child born spontaneously. She gave no history of cancer heredity. She consulted us in April 1938 on account of right upper quadrant pain. Since we were busily engaged in finding 1,000 women for our research, a pelvic examination was suggested. This revealed a myomatous uterus reaching three fingerbreadths above the symphysis and a hypertrophied and badly lacerated cervix. The laceration extended to the vaginal vault on the left side. The vaginal surface of the cervix felt coarsely granular. It bled at several points. At one point there was a yellow slough. A blunt tipped probe sank in at the left corner of the external os. Tissue was taken from this area for biopsy. Dr. Geiss of the department of pathology reported "early squamous cell carcinoma."

On April 7, 1938 the patient was given 2,400 mg. hours of radium in the uterine cavity. On April 28 she was given 2,400 mg. hours against the vaginal cervix. Examination in May 1944 showed no signs of recurrence. Volunteer 430 represents thus a six year cure.

CASE 2 (volunteer 174).—Mrs. M., aged 41, came in response to an appeal to a woman's club. She had had one child born spontaneously. Her maternal grandmother had been operated on for cancer of the breast at 75 and had lived to be 85. At the patient's first examination on April 1, 1939 a bilateral laceration of the cervix was found with an extensive area of papillary erosion. This was reported to her family physician, who referred her back to us for treatment. One month later she entered the Hospital of the Woman's Medical College. At this time a violently red tuft of papillary tissue was discovered close to the external os. This was about 2 mm. in diameter and about 3 mm. high. It had not been present at the first examination.

The uterus was curetted and the eroded area was removed by a Sturmdorf trachelectomy. Dr. Geiss reported "chronic cervicitis, papillary erosion, early squamous cell carcinoma." The patient was immediately given 1,500 mg. hours of radium in the cervical canal. This was followed by 2,400 mg. hours against the cervix. Examination on May 12, 1944 showed no recurrence. Volunteer 174 thus represents a five year cure.

CASE 3 (volunteer 68).—Mrs. D., aged 34, had had one child born instrumentally. She was brought by her sister, who was a member of our research group. Her family history was negative for carcinoma. Examination on April 29, 1939 showed a bilateral laceration of the cervix with eversion and an extensive area of papillary erosion.

On May 8 a curettage and Sturmdorf trachelectomy were performed in the Hospital of the Woman's Medical College. Dr. Geiss reported that two sections from one corner of the specimen showed squamous cell carcinoma "comparatively early."

On May 15, 1939 2,400 mg. hours of radium was given against the cervix. On June 19 the patient was given 1,650 mg. hours of radium within the uterine cavity. Examination on May 17, 1944 showed no recurrence. Volunteer 68 thus represents a five year cure.

The fact that these three early cancers of the cervix were discovered in areas of papillary erosion and not in healthy, noninflammatory cervices is significant. It lends support to the theory that cancer tends to develop in these so-called "areas of epithelial restlessness." For this reason we consider the discovery and cure of such lesions to be an important factor in the control of cancer of the uterus.

CASE 4.—A fourth early cancer of the cervix was discovered on the eleventh visit of volunteer 527. Mrs. T., aged 65, had had one instrumental delivery and two miscarriages. She gave no history of cancer heredity. At 45 years of age she had had an application of radium for menopausal bleeding. She joined the research group in April 1938 and came regularly twice a year with negative pelvic findings. At her tenth visit, in September 1942, she reported a spot of blood on her clothing on one occasion. The smooth atrophic cervix appeared congested and bled a little on bimanual examination. The patient's blood pressure was 210. In the absence of any demonstrable pathologic condition the spot of blood was considered to be due to arteriosclerotic bleeding and the patient was told to return if it happened again.

Five months later, at her eleventh visit in February 1942, she reported no bleeding and no discharge but examination

revealed a smooth red polypoid growth 1 cm. in diameter projecting through the external os. This bled on touch. A biopsy showed adenocarcinoma. Radium needles were inserted into the polypoid growth for 1,300 mg. hours, and 2,400 mg. hours was given in the uterine cavity. Examination on May 3, 1944 showed no recurrence. Volunteer 527 represents a fifteen month cure.

A cancer of the body of the uterus was discovered in volunteer 1140. Mrs. B., a widow aged 65, had been coming to Dr. Fetterman for pelvic examination twice a year for a long time. She was put on the research list. In April 1938 she reported vaginal bleeding. On April 22 a diagnostic curettage was performed. This showed adenocarcinoma. As she was medically handicapped, surgery could not be considered. The patient was given 2,400 mg. hours of radium in the uterine cavity followed by 3,000 roentgens. Examination on May 18, 1944 showed no recurrence. Volunteer 1140 represents a six year cure.

Another cancer of the body of the uterus was reported on the seventh visit of volunteer 898, who had what we considered to be a symptomless myoma not requiring treatment. However, following other advice, she had this myomatous uterus removed in March 1942 by supravaginal hysterectomy in an excellent suburban hospital. Their well qualified pathologist reported a small area of adenocarcinoma in the endometrium just above the line of removal. We watch this patient with peculiar interest. At her last visit in January 1944 she gave no evidence of recurrence.

TABLE 3.—*Benign Lesions of the Pelvis*

	Number
Cystic tumors of the ovary	40
Inflammatory lesions of the cervix	461
Mucous polyps of the cervix	118
Myomatous tumors of the uterus	167
Leukoplakia	3
Papillomas	2

A cystic tumor of the ovary was discovered on the tenth visit of volunteer 176, nothing having been detected six months previously. Operation showed this to be a rapidly growing malignant tumor of the ovary with extension to the pelvic peritoneum. Recurrence was prompt. The course is steadily down hill.

Since January 1942 cancer of the breast was discovered three times, on the fourth visit of volunteer 257 and on the seventh visit of volunteer 947 and volunteer 1239. These cases were treated by radical mastectomy.

In addition to the pelvic cancers, a variety of benign lesions of the pelvis were discovered. These are classified as in table 3.

The inflammatory lesions of the cervix varied from a mild endocervicitis to areas of papillary erosion the size of a 50 cent piece (30 mm.) or larger.

The relation between childbearing and cervical erosions in the volunteer group was investigated by Dr. Eleanor Scott, Mary Putnam Jacobi fellow in the Department of Gynecology of the Woman's Medical College of Pennsylvania for 1940-1941. She found the incidence of erosions in the parous volunteers to be 28 per cent, while in the nulliparous volunteers it was 14 per cent.

In 295 of the inflammatory lesions, treatment seemed necessary and was advised. Treatment was carried out in 200 cases. Our preference was for the Sturmdorf trachelectomy. This operation makes it possible to send an intact specimen to the pathologist and, in our experience, was less apt to be followed by recurrence than cauterization or conization. None of the treated cases have been put to the test of labor.

The completion of the five year period for which the research was undertaken finds the examining physicians and the major portion of the volunteer group thoroughly convinced of the value of this procedure. The record of five early cancers of the uterus discovered and cured is certainly gratifying. The elimination of 200 precancerous lesions of the cervix is equally gratifying. The opportunity to see a large number of healthy cervices has taught the examining physicians to pay more attention to minor deviations from the normal. The education of the volunteers as to the possible significance of certain apparently trifling symptoms has been important. Both volunteers and examiners are ready for "another five year plan."

TABLE 4.—*Classification of Inflammatory Lesions of the Cervix*

	Number
Cervicitis	58
Endocervicitis	57
Erosions:	
Simple	95
Follicular	33
Papillary	98
Nonspecified	120
Total	461

SUMMARY

A group of presumably well women between 30 and 80 years of age volunteered to come for pelvic examination twice a year for five years to test the value of periodic pelvic examination in the control of cancer of the uterus. A total of 9,111 examinations have been made; 545 volunteers have completed the five year period.

In the course of these 9,111 examinations, four early cancers of the cervix and one early cancer of the uterus were discovered. The patients were adequately treated. They remain well, 2 for six years, 2 for five years and 1 for fifteen months after treatment.

Also in the course of the 9,111 examinations, 461 inflammatory lesions of the cervix were discovered. Two hundred of these have been treated and eliminated.

CONCLUSIONS

Cancer of the uterine cervix can be detected in an early and curable stage by means of the periodic pelvic examination of presumably well women.

TABLE 5.—*Treatment Carried Out in Inflammatory Lesions*

	Number
Chemical cautery	8
Electric cautery	75
Conization	27
Amputation	9
Sturmdorf trachelectomy	60
Trachelorrhaphy	18
Not specified	3
Total treated	200

Inflammatory lesions of the cervix, which may predispose to cancer, can be detected in about 35 per cent of presumably well women by means of periodic pelvic examination.

The death rate from cancer of the uterus could be materially reduced by the semiannual pelvic examination of married women 30 years of age and over.

136 South Sixteenth Street.

ABSTRACT OF DISCUSSION

DR. NORMAN TREVES, New York: There is a potential number of slightly over 26 million women to whom the appeal for cancer prevention might be directed. They should become the potential "volunteers" in cancer prevention clinics. Dr. Macfarlane and her associates have discovered 18 malignant lesions in 10 different organs during the course of 9,111 examinations. This is about 0.002 per cent. At first glance one would think this figure excessively small, but if the 26 million women over 20 years of age could be examined for the first time one might expect the discovery of as many as 52,278 malignant neoplasms. This would probably represent cases detected early enough to give a high percentage cure rate. Cancer of the cervix, the most common cancer occurring in females, is the most curable if encountered early. Dr. Macfarlane and her associates have given up the Schiller test. This procedure now has apparently outlived its usefulness. It was valuable at the time it was instituted, for it called attention to early malignant lesions of the cervix, especially those which our pathologists often report to us as "intraepithelial carcinoma." The educational significance of periodic examinations for apparently trifling symptoms has been well worth while. I am sure that it has given all of the "volunteers" in this cancer prevention clinic a sense of security which they otherwise would not have had. With over 164,000 deaths from cancer in the United States and with probably over half a million patients alive with various malignant conditions, education of both the public and the profession must go speedily forward. The ultimate goal of cancer prevention clinics is to influence individuals to accept periodic cancer health examinations as the best means of reducing the mortality in cancer and allied lesions and many other types of chronic disease. Uterine cancer is so accessible that here at least is an approach to cancer control which requires only fingers to feel and eyes to see. It demands no unusual skill, no special instruments. A gloved hand, a speculum, forceps and good illumination are practically the only essentials for competent examination.

DR. AUGUSTA WEBSTER, Chicago: A clinic was started at the Women's and Children's Hospital in Chicago, under the auspices of the Women's Field Army of the American Society for the Control of Cancer, in May of last year. The object of the clinic was to examine persons without symptoms, or with mild symptoms, with the intent to discover any evidence of early cancer. Detection alone of suggestive lesions was the objective, and biopsies and treatment were left to the patient's private physician. The scope of the Chicago venture has been enlarged to include a general physical examination and routine laboratory procedures, such as urinalysis, blood count and the Wassermann test. The emphasis is therefore placed on general health conservation as well as on detection of early cancer. Many constitutional diseases have been found in the course of our work, and a number of lesions have been found which are suggestive of early cancer. All the patients have been referred to their private physicians for treatment. In the first 400 cases we found 5 carcinomas of the breast, 2 carcinomas of the breast, axillary, 1 basal cell carcinoma of the scalp, 1 basal cell carcinoma of the face, 1 adenocarcinoma of the fundus and 2 advanced inoperable pelvic cancers. We also found the following possible malignant growths: 2 breast masses, 3 friable polyps, 5 skin lesions, 1 suggestive lesion of the tongue, 1 postmenopausal bleeding, 1 suggestive (ovarian?) mass, 1 case of suggestive gastric symptom and 1 lymphatic leukemia. Such work as described by Dr. Macfarlane accomplishes much in the way of health education and health conservation. Many of the discouraging, hopeless, late cancers could be avoided if the patients would present themselves for examination at regular intervals and if the doctors would look carefully for early signs and symptoms of cancer.

DR. CATHARINE MACFARLANE, Philadelphia: I should like to emphasize the importance of the six months interval. When we started on this research we had no idea how often these patients should be examined; but the fact that 1 cancer of the ovary developed in a six months interval, 1 cancer of the cervix developed in a six months interval and, since this paper was completed, a sarcoma of the endometrium has developed in a six months interval after previous normal examination seems to prove the point that the six months interval is not too short.

DIAGNOSIS OF ORBITAL TUMORS

ADDRESS OF THE GUEST OF HONOR

WILLIAM L. BENEDICT, M.D.

ROCHESTER, MINN.

Every case of orbital tumor presents a problem in diagnosis. Features concerning the onset and course of signs and symptoms of tumor are the factors which, when put together, constitute the basis for distinction from diseases of the orbit that simulate tumor. These factors are open to various interpretations, for the significance of any one of them must be regarded in the light of all other factors that can be ascertained. Certain signs are present in some degree in progressive stages of growth of all orbital tumors. For the most part they are anatomic and result from changes of situation and size of the tumor with displacement of the globe and orbital contents. As all orbital tumors are space-taking lesions, the displacement of the eyeball, usually proptosis, is the most common of the early signs and is easily discernible in most cases by inspection alone without use of instruments. Changes in the walls of the orbit or in the density of the orbital contents may be altered by tumors in such a way as to be detected by palpation or by roentgenograms. Arteriovenous aneurysm may be recognized by the bruit heard with the stethoscope or by the thrill felt by the finger over the eyeball, or by both of these signs. All of these means of investigation must be utilized routinely in examination.

Other signs have to do with function of the eyes, such as motility and vision. Rotation of the eye may be impaired by paralysis of one or more of the extraocular muscles, which, in turn, may be the result of interference with the nerve supply, or of mechanical interference by involvement of the muscle or its tendon by invasion or displacement. Disturbance of ocular motility, as a rule, is not helpful in diagnosis of tumor or in the determination of the situation of the mass of the lesion, whatever its nature, whether diplopia is or is not present. Loss of vision is of great importance as a diagnostic sign only when it occurs as an early change in the course of exophthalmos. Defects in the visual fields are significant in a limited number of cases of posterior orbital involvement.

All of these signs of orbital tumor may be brought about by disorders that originate outside the orbit, such as intracranial tumors with intraorbital extension, aneurysms, cranial and facial deformities from congenital and acquired disease, maldevelopment, trauma and endocrine dysfunction. Subjective symptoms of orbital tumor, such as deep pain, sense of pressure and expansive headache, numbness, loss of tactile sensation about the face and head, throbbing or pulsation, and stinging burning sensation of the eyeball and lids, are seen only occasionally and may not be at all relative to the tumor but expressions of anxiety or purely functional experiences. Such symptoms, however, are helpful in evaluating conditions which may or may not be referable to a tumor. A study of the signs and symptoms of orbital tumors in a considerable number of cases reveals some interesting and helpful trends in making a diagnosis and in deciding on methods of treatment and surgical management.

From the Section on Ophthalmology, Mayo Clinic.

Read before the Section on Ophthalmology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 14, 1944.

There are three cardinal signs of tumor of the orbit which I shall discuss in the order of their importance. The first is exophthalmos, the most common of all the signs of tumor of the orbit. As exophthalmos also occurs in all cases of space-taking or expansive disorders within the orbit, anterior ocular displacement in itself is not indicative of the cause even when proptosis is altered by displacement to one side. Generally speaking, the rate of increase in proptosis is an index of the rate of growth or expansion of a space-taking lesion behind the eyeball, but when proptosis is caused by a tumor its extent is not truly indicative of the size of the lesion, as tumors of the anterior part of the orbit, particularly in the superior quadrants, will, as a rule, produce exophthalmos in the early stages of their development, and as the globe occupies most of the space in the anterior third of the orbit, any extraocular growth displaces the eyeball as long as the bony walls stand firm, while tumors of the posterior half of the orbit may acquire considerable size before appreciable proptosis occurs. This is due to the absorption of fat from compression by slow-growing tumors and freedom with which a tumor may shift its position to occupy space where resistance is low.

A tumor in the anterior half of the orbit displaces the eyeball away from the side of the orbit along which it grows forward. This may be a confusing observation. The tumor may have its origin well back of the eyeball on the opposite side from which it appears to be and may cross from one side of the orbit to the other as it grows forward. In 1 case, observed at the Mayo Clinic a few years ago, a large mucocele of the maxillary sinus and the ethmoid cells had entered the orbit through the nasal wall, well behind the globe. Within the orbit there were a palpable firm mass in the superior temporal quadrant and proptosis of the globe with displacement toward the nasal side. There was no indication of a mass situated in the nasal side of the orbit, and the logical surgical approach seemed to be along the superior temporal rim of the orbit. A similar situation may be encountered in cases of tumor of the blood vessels and some other tumors that expand by invasion of neighboring tissue rather than as encapsulated bodies.

Proptosis without lateral displacement of the eyeball is the rule in cases of space-taking masses arising in and filling the posterior third of the orbit, particularly tumors of the optic nerve. A tumor in this region may grow to the size of the eyeball and produce considerable proptosis without lateral displacement or troublesome disturbance of rotation. This also holds true of exophthalmos caused by conditions within the orbit other than tumors unless associated with paralysis of ocular muscles.

As most tumors of the orbit are unilateral, unilateral exophthalmos may be presumed to be due to a tumor unless there is some other evident cause for it. The presumption of tumor, however, does not warrant surgical exploration of the orbit until other probable causes of exophthalmos have been ruled out and only then if there is predictable probability of danger from waiting too long. Unilateral exophthalmos of a slowly progressive character is seen in metabolic diseases that in themselves present difficulties in diagnosis, particularly goiter. Visual loss is rare in such cases in the early stages; danger of permanent injury is quite remote and surgical intervention may be safely deferred. However, surgical exploration of the orbit is often done under the impression that a hidden soft tumor is responsible for the proptosis. The results are difficult to explain to the patient and his relatives.

Bilateral exophthalmos due to tumors of the orbits is rare but is commonly present in Mikulicz's disease and in dysthyroidism. The rate of development of exophthalmos in such conditions is of more significance in differential diagnosis than are its extent and its duration.

Angioneurotic edema begins with intermittent swelling of the eyelids; it gradually increases in severity and extent and finally produces permanent swelling of the lids and exophthalmos, which may persist for several years with little variation. In the early stages the condition resembles pyocele of the frontal or ethmoid sinuses, and surgical intervention, again based on presumption, has been done without any benefit.

Lymphoblastoma usually begins in the region of the lacrimal fossa and invades the eyelids. At the first examination one may find one or both sides involved. While one side may show changes some months or years before they are noticed on the other side, lymphogenous tumors of the orbit, particularly in Mikulicz's disease, are with few exceptions bilateral. Of this group of neoplastic diseases frequently found to be bilateral, neurofibromatosis is most often unilateral.

Confusion in the diagnosis of orbital tumors occurs when exophthalmos is bilateral and combined with moderate swelling of the eyelids. This is the picture usually seen in exophthalmic goiter and in Mikulicz's disease. On the other hand the ocular manifestations of either of these diseases may be limited to one side. Edema of the eyelids and conjunctival chemosis may be absent. If the basal metabolic rate is low and other signs of hyperthyroidism are minimal or absent, exophthalmos in a case of arrested hyperthyroidism might well be and often is attributed to tumors of the orbits. That many such mistakes have been made is evident from the reports of cases in which surgical exploration has been undertaken for removal of a suspected tumor with the result that no tumor was found. Often the reason for exophthalmos could not be determined. In such cases the condition has been referred to as "pseudotumor of the orbit." Exophthalmos due to hyperthyroidism is sometimes delayed; it occurs some months after an episode of mild general symptoms that never were severe, or even were unnoticed, and have then entirely subsided. In some cases exophthalmos associated with edema of the lids subsides without treatment and the cause of the changes in the orbit may never be known. Low grade cellulitis following dental infection and extraction of teeth is a case in point. Exophthalmos due to low grade cellulitis may last several months and subside without permanent disabling sequelae. Exophthalmos of goiter may behave in the same way, but exophthalmos due to neoplastic diseases does not subside spontaneously.

Mucocele and pyocele causing exophthalmos often are undiagnosed or are mistaken for tumor. The reasons for this are obvious. Mucocele is slow in development, shows minor or no changes in the roentgenogram, produces no inflammatory reaction in the orbit and may be palpated in some cases within the orbital rim as a firm smooth mass. Dermoid cyst of the orbit is likely to be mistaken for tumor or mucocele. To distinguish tumor and pyocele or mucocele may be rather difficult, as the entire symptom complex may well indicate one or the other. Neither condition, however, should be confused with inflammatory disease of the orbit or with aneurysm.

The exophthalmos of aneurysm is peculiar in onset and progress and deserves special consideration, because surgical exploration of an orbit which contains an unsuspected aneurysm may lead to serious complications. Pulsating exophthalmos due to arteriovenous connection within the cavernous sinus gives rise to a well known symptom complex that is not often missed. However, when the arteriovenous connection is within the orbit, whether due to trauma or to disease, only small vessels are involved and the distinct bruit and thrill of cavernous sinus-carotid fistula may be absent or only slight, but a venous aneurysm of considerable size may develop so as to require radical surgical intervention. The outstanding features of such conditions are derived from the history rather than from examination.

Exophthalmos due to traumatic aneurysm, which sometimes follows penetrating injuries of the orbit or fractures of the skull, occurs suddenly as a result of hemorrhage into the orbit. Within a few minutes after the injury the eye is noticeably protruded and the eyelid swollen and discolored from hemorrhage. As the swelling and discoloration recede, the veins become distended, all orbital tissues become congested and the exophthalmos becomes stationary. Bruit and thrill can be detected. This is the usual manner of development of pulsating exophthalmos due to injury.

On the other hand, arteriovenous aneurysm due to vascular anomalies or disease usually develops slowly over a period of years and is accompanied by the appearance of enlarged veins over the face, a pronounced subjective bruit and a distinct pulsatile thrill. In some cases varices in the orbit take the form of sacculated aneurysms or occur as spongy cavernous tumors. Thrombosis may form in these cavernous spaces and give rise to acute inflammatory reaction, pain, swelling and increased proptosis. Discoloration of the lids will indicate whether or not the lesion has bled and is a diagnostic sign that should not be overlooked. Careful inquiry should be made regarding a history of discoloration of the skin of the lids. Pigmentation of the skin may be noted if hemorrhages have been frequent or severe. In any case of suspected aneurysm of the orbit, careful search should be made for bruit and thrill.

In some cases of aneurysm, exophthalmos can be made to increase and to decrease with exertion and change of position of the head, a condition known as intermittent exophthalmos. Exophthalmos that varies considerably in degree usually is indicative of fluid masses of some kind behind the globe. They may consist of mucus or blood. Most commonly they are found to be mucoceles or pyoceles that can be emptied by change in position of the head.

According to Berens,[1] "Intermittent or periodic exophthalmos is attributed to a variety of causes, the most common of which are varicosities of the orbital veins, vascular tumor, hemorrhage, cavernous angioma and recurrent inflammation. The exophthalmos tends to increase or become stationary, or to disappear, depending on the disposition of the etiologic factor."

The most striking and unmistakable syndrome is caused by aneurysm. According to Walsh and Dandy,[2] who recently have reported such a case, "It is characterized by pronounced and rapid, almost instantaneous protrusion of one eye when venous stasis is induced by bending the head forward, by lowering the head, by turning the head forcibly, by hyperextension of the neck, by coughing, by forced expiration with or without compression of the nostrils, and by pressure upon the jugular veins. The ocular protrusion disappears immediately when the head is erect and when artificially induced venous congestion is relieved. Usually, but not invariably, there is exophthalmos when venous congestion does not obtain. There may or apparently (from cases reported in the literature) may not be pulsation of the eyeball. The vision may or may not be affected. The condition is progressive and may be productive of unbearable pain and troublesome diplopia."

In any case of exophthalmos of obscure origin the probability of tumor must be considered from two points of view: first, whether the exophthalmos can be explained on the basis of any other cause; second, whether, if it is due to a neoplasm, it is benign or malignant and is primary within the orbit or invades the orbit by extension. The problem can best be attacked by attempting first to eliminate non-neoplastic diseases. This is not always easy to do. To rule out goiter, for instance, may require observation for several months under therapy. Exophthalmos may occur during an episode of myxedema, a fact which is often overlooked. A careful history should be taken and one should look for signs of previous hyperthyroidism regardless of the age of the patient. The basal metabolic rate should be known but its significance should not be overestimated, particularly if it is low. Repeated careful measurements of the degree of exophthalmos should be recorded, and comparison of photographs taken from time to time is helpful in determining minor changes. The facial expression in thyroid disease is often a most valuable diagnostic aid when it is properly interpreted.

The mechanism of exophthalmos in goiter is well known. In about a fourth of the cases of acute hyperthyroidism, swelling of the eyelids and exophthalmos come on rather early in the course of the disease and may be the most conspicuous signs. Edema of the eyelids and conjunctivas varies from mild to extreme severity, when it is practically irreducible. In cases of acute hyperthyroidism it is practically always bilateral and in advanced stages it is unmistakable. In cases of chronic hyperthyroidism, exophthalmos quite often appears first in the posthyperthyroid period, after thyroidectomy. As a rule the lids are not swollen and there is little or no chemosis. The exophthalmos may be unilateral, with or without muscle paralysis. The mechanism of the exophthalmos in chronic goiter is the same as it is in cases of acute hyperthyroidism, namely edema of the orbital tissues. As the ocular muscles are greatly swollen, motility is impaired and bizarre muscular findings vary from week to week. Although rotation may be impaired and squint may be present, the proptosis is not altered by lateral displacement of the eyeball and vision is seldom affected. The only other signs of goiter appear in the facial expression, particularly the position of the eyelids. The characteristic retraction of the upper eyelids usually indicates to the experienced observer the cause of the proptosis.

Mikulicz's disease may closely resemble orbital changes of hyperthyroidism. There are chronic swelling of the eyelids with exophthalmos, disturbance of motility and in some instances transient chemosis. These alterations may vary in extent from time to time but are for the most part consistent and progressive. The patient may not be seriously ill, and the general symptoms such as weakness and loss of weight may be

1. Berens, Conrad: The Eye and Its Diseases, Philadelphia, W. B. Saunders Company, 1936.
2. Walsh, L. B., and Dandy, W. E.: Unpublished data.

similar to those of the posthyperthyroid state. In Mikulicz's disease, however, there are nodules of infiltration that can be felt in the lids, about the eyeball or in the temporal region. The lacrimal and salivary glands are infiltrated and enlarged and there may be changes elsewhere, particularly in the thorax. Such glandular changes are not found in cases of goiter. In Mikulicz's disease the exophthalmos and the swelling of the lids rapidly disappear after the use of roentgen therapy, whereas, in goiter, irradiation has no appreciable effect in the cases in which the disease is chronic.

Other diseases that cause exophthalmos must be ruled out by local investigation of neighboring structures. A low degree of exophthalmos is common in cases in which a pituitary tumor brings about obstruction to the blood flow through the cavernous sinus. Other lesions about the optic chiasm may act in a similar manner to bring about congestion within the orbit and cause exophthalmos. Other signs of chiasmal disturbance, such as defects in the visual fields and changes noted by roentgenography, are determining factors.

Thrombosis of the cavernous sinus nearly always produces exophthalmos, but other signs are so indicative of the cause that tumor of the orbit is not suspected, particularly in the presence of fever and other signs of acute illness.

In an attempt to rule out cysts as a cause of exophthalmos, some surgeons have attempted to explore the orbit with a trocar. Although I never have employed this method of attempting to satisfy curiosity, I have seen some unfortunate results from this practice when employed by other surgeons. It is a futile procedure and I know of no condition which can be helped by it. On the contrary, great harm may be done. I know of 1 case in which an encapsulated tumor of the orbit was pierced by a trocar. When operation was performed at a later date, the patient was found to have a malignant tumor that had spread along the path of the trocar to the lids and was spreading from this tract. The encapsulated tumor originally could have been removed intact if the capsule had not been ruptured; but because of the release from its capsule, the lesion spread throughout the orbit and the eye was lost. Exploratory incisions also are of little value and should not be made for diagnosis unless one is prepared to continue with whatever surgical procedures are necessary to complete the indicated surgical management.

Loss of visual acuity with preservation of vision in the peripheral field strongly indicates posterior orbital or chiasmal lesions. When central loss of vision occurs before exophthalmos appears, the chances are much in favor of the lesion being due to an inflammatory process and of loss of vision being attributed to a condition such as retrobulbar neuritis. While the possibility of tumor must be borne in mind, the diagnosis of tumor rests on corroborative evidence. In the absence of ophthalmoscopic changes such as choked disk, optic neuritis, optic atrophy, retinal and choroidal disease and opacities in the media, visual loss may be presumed to be due to changes along the visual pathways. The lesion may be retrobulbar and situated within the orbit. There is always the probability that it may be due to a tumor.

What visual losses are attributable to tumor of the orbit? The most common visual disturbance is lowered visual acuity. This may begin as a generalized depression of visual function, without significant changes in the visual field, or as a central or paracentral scotoma. A tumor of the orbit that produces loss of vision before exophthalmos occurs must be situated in the posterior portion of the orbit and affect the optic nerve. It may be a tumor of the nerve or its sheath or one that blocks the nerve by pressure, possibly a meningioma. Without other signs of tumor such a diagnosis obviously cannot be made. As a cause of visual loss, tumors of the optic nerve are rare compared with toxemia and diseases of the central nervous system. It is not always possible to arrive at a definite conclusion in case of recent onset until after some weeks of observation.

Roentgenograms are useful in the identification of some orbital tumors. Osteomas of the sinuses that encroach on the orbit are best identified by this means. Hyperostosis of the orbital walls is brought about by tumors and diseases of the bone or of soft tissue that are situated near the bone. The most common form of hyperostosis that one sees in the roentgenogram is that of the sphenoidal ridge caused by an intracranial meningioma. Some vascular tumors that develop slowly along the orbital wall also produce hyperostosis. Such a case was reported by me and Love.[3] It has been shown rather conclusively that the roentgenographic appearance of hyperostosis caused by meningioma cannot be distinguished from that of vascular tumors, although the lesion in the bone is quite different.

Erosion of the walls is the rule in cases of pulsating tumor, although in some instances I have seen thickening of the lateral wall of the orbit caused by hemangioma and pulsating exophthalmos.

Pyoceles of the sinuses cause pronounced thinning of the surrounding bones that give way to the expansion of the cyst. I have been surprised in some cases to see severe distortion of the orbital walls and the sinuses, with little evidence of change in the roentgenogram. In cases of draining pyocele the roentgenogram may be entirely normal.

Considerable comment has been directed to roentgenograms of the optic canals. In a large series of cases of posterior orbital tumors and chiasmal lesions in which roentgenographic examination and operation have been performed at the clinic, very few changes of note have been observed in the size of the optic canals, and these have not always been explainable by the findings at operation. One cannot be sure that a tumor has involved the optic canal because the canal is larger than its fellow.

Soft tumors of the orbit, particularly if composed of dense fibrous tissue, may be portrayed in the roentgenogram with surprising clearness. While the roentgenograms of the head are often normal in cases of orbital tumor, every case should be studied by at least lateral and anteroposterior roentgenograms.

In a large series of orbital tumors one will find rare changes about the eyes that are indicative of tumor. In doubtful cases these changes may be of considerable help in diagnosis. In the eyelids one may find lesions that are of the same nature as a tumor in the orbit. Mikulicz's disease is a case in point. The swelling of the eyelids and exophthalmos are quite similar to those seen in goiter, but nodules in the lids or firm hypertrophic masses are always present in Mikulicz's disease but never in goiter. A biopsy will be conclusive.

Epitheliomas of the lids usually are easily recognized, but deep seated carcinomas, movable and firm, which in size and position resemble lipomas, are not uncommon. Such carcinomas have been known to follow roentgen therapy of superficial lesions.

3. Benedict, W. L., and Love, J. G.: Cavernous Hemangioma of the Orbit with Hyperostosis: Report of a Case, Am. J. Ophth. **22**: 1149-1151 (Oct.) 1939.

Arnold Knapp called attention to the wrinkling of the fundus caused by pressure of a tumor on the posterior side of the eyeball. I have often seen the streaks in the fundus caused by wrinkling in cases in which the fundus was pushed forward for 4 to 6 diopters. I have never seen them in any other condition than tumor.

SUMMARY AND CONCLUSIONS

The probability of tumor in any case of exophthalmos is so great that only in cases of goiter is there serious doubt of the presence of an expanding lesion. The temptation to explore the orbit is irresistible for some surgeons and an exploration is planned. This is not a surgical procedure but a diagnostic one unless the surgeon is prepared to remove the tumor and do the necessary repair. Exploration by trocar is useless and should never be done. Such a procedure is of no help in diagnosis, and in case of malignant tumor or vascular aneurysm it is positively dangerous. Puncture for digital exploration only should never be practiced. One cannot explore the orbit with the finger from any one place along the rim and be sure that nothing has been missed. Exploration of the orbit for diagnosis should always be done through an incision large enough and so placed that, should a tumor be encountered or any other pathologic condition be found that would require surgical removal, the operation can be completed at the time. If one is not sure of the presence of a tumor, it is in most instances safe to employ roentgen therapy and await developments.

THE ROENTGENOLOGY OF OSTEOMYELITIS

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Osteomyelitis is a disease which has been known to man for many long years, and during that time a great deal of clinical and laboratory investigation has been performed. Many of its mysteries have been solved, but it remains today one of the important orthopedic problems. A brief survey of the literature of just the past few years will show the advocation of many different forms of treatment, and their very number is an indication of the clinical difficulties one meets with this disease. The most recent innovation has been the advent of penicillin, for which we have held high hopes; but as yet sufficient time has not elapsed to evaluate its therapeutic effectiveness.

With the thought in mind that no disease can be rationally treated unless its diagnosis is established, we would like to discuss the diagnosis of osteomyelitis, chiefly from an x-ray point of view.

The onset of osteomyelitis is most commonly seen in the age group of 5 to 20 years, the period in life during which we undergo our most strenuous physical activity. Many writers have pointed to this age incidence and related trauma as a predisposing factor. Some weight is added to this theory by the fact that boys are more subject to the disease than are girls, and it seems reasonable to assume that bacteria may gain a foothold in traumatized tissue more easily than in normal tissue.

The usual offending organism is Staphylococcus aureus, though a small proportion of cases (about 10 per cent) show other bacteria, among which are streptococci, pneumococci and typhoid bacilli. The organisms may gain access to the bone in one of three ways, the first two of which we do not consider important because they do not lead to any difficulty in diagnosis. These two are (1) by contamination of the bone such as may occur in a compound fracture and (2) by direct extension of an infection of the soft tissues adjacent to a bone. The third, and important, method is the hematogenous. It is by this route that bacteria are carried from a primary source to their new focus in bone. The primary source may be a well established clinical lesion such as a furuncle or carbuncle, or it may be a completely asymptomatic process such as a small infected abrasion. In either event the organisms enter the blood stream and, after escaping the body's protective mechanisms, are finally deposited within the bone. There is a rather definite predilection for certain areas of the bones, and these areas are those at which the blood supply is the greatest or, in other words, where growth is most active. Thus, the first changes of osteomyelitis are most frequently seen in the metaphysis of the long bones rather close to the epiphysial line.

With the lodging of the bacteria in the bone, a minute abscess begins. The organisms multiply, their toxins are liberated and blood vessels become occluded. These processes lead to the first change in the bone that may be seen on the x-ray film. The exact physiologic mechanism of this change is not known, but it is generally believed that the formation of a minute abscess within the bone stimulates the activity of osteoclasts in the adjacent bone, which together with inflammatory cells (connective tissue and round cell) produce the absorption of living bone. This appears on the film as an area of rarefaction, which usually is seen as a circular zone of slightly lessened density in which the normal sharp architecture of the trabeculae is beginning to lose its clearcut appearance. The time at which this change can first be seen is often said to be in the neighborhood of seven to ten days from the beginning of the disease, subject to such variable factors as the thickness of the part, the relative density of the interposed tissues and the amount of lime salts present in the bone at the time of onset of the disease.

If the virulence of the organism within the abscess is greater than the resistance of the host, the process enlarges through the cancellous bone along the lines of least resistance. If it meets the epiphysial plate its spread in this direction is usually checked, because this cartilaginous structure is very resistant to infection. At times, however, this resistance is overcome and the disease may then involve the epiphysis. Again, the infection may advance in the opposite direction and gain access to the medullary canal. This may then result in necrosis of the fatty bone marrow and a rather extensive portion of the cortex of the diaphysis. Spread in a lateral direction brings the inflammatory process to the cortex. All of these developments lead to the accentuation of the first noticeable x-ray changes. That is, the zone of rarefaction becomes more pronounced and more extensive.

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Read before the joint meeting of the Section on Orthopedic Surgery and the Section on Radiology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 16, 1944.

In a large percentage of osteomyelitis cases a subperiosteal abscess develops, and this is produced in one of two ways, either of which may sometimes be demonstrated on the film. If the medullary canal is infected, the process may extend through the haversian canals to the subperiosteal bone. In so doing, the bone surrounding the haversian canals may be destroyed, thus forming a demonstrable channel. The second route of spread to the subperiosteal region occurs in the cancellous bone. When the abscess spreads laterally it meets the cortex, which it necroses and perforates, thus allowing the escape of the infection to the subperiosteum.

Occasionally an osteomyelitic process may begin directly beneath the periosteum, and in these cases a rather extensive abscess may form before any changes can be demonstrated on the x-ray film. Once the inflammatory process has gained access to the subperiosteal bone, it strips this membrane away from the cortex. The extent of this stripping is quite variable, but it may go so far longitudinally as to involve the entire shaft and it may also completely surround the bone. However, the subperiosteal abscess almost never extends beyond the epiphysial line at either end, for here the periosteum is very firmly attached.

The development of the subperiosteal abscess leads to another x-ray sign. When the periosteum is separated from the cortex it carries with it many osteogenic cells, which now receive their nourishment from the rich periosteum. These cells are stimulated to activity and promptly begin to lay down a thin layer of bone. This process is so rapid that in a great many cases sufficient new bone to show on an x-ray film is produced in about a week. This new bone is first seen as a thin zone of calcification parallel to the cortex. Where the periosteum has been extensively stripped away from the cortex, this new bone may form a sheath surrounding the old bone, and dead bone or sequestrums may be entirely enclosed.

A similar physiologic process, that is the stimulus of living bone cells to form new bone in the presence of infection, leads to the third x-ray change. The osteogenic cells of both the metaphysis and the diaphysis in the infected and adjacent areas begin to produce new bone. This leads to two characteristic changes. First, as new bone is laid down, the bone becomes thickened in its cortical portion and the trabeculae in the cancellous portion become heavier. Second, the haversian canals and the fibrous spaces between trabeculae may be filled with new bone and thus obliterated. These processes lead to a thick, sometimes ivory-like bone. A film of such a bone shows it to be heavier and denser than normal.

To summarize the process thus far, it can be said that pyogenic organisms are carried to the bone by the blood stream. There they set up an abscess which leads to absorption of bone. The abscess then spreads and may reach the periosteal region by direct extension through the cortex or via the medullary cavity and the haversian canals. Thus a subperiosteal abscess is set up. While these processes are going on reparative attempts are made by the bone, and these manifest themselves by periosteal and endosteal bone formation.

These acute changes sometimes subside spontaneously or with treatment, but frequently they fail to do so and then the picture of chronic osteomyelitis prevails. This tendency to chronicity is brought about chiefly by the anatomic and pathologic conditions involved. Bone which is killed by the acute infection is absorbed with great difficulty and this remains, sometimes free in the abscess cavity and sometimes incorporated within new bone. The infected dead bone may lead to chronic draining sinuses or it may be completely sealed off. In the latter case it is possible for living organisms to remain viable for many years with the ever present possibility of flaring up again into acute activity. The x-ray appearance of chronic osteomyelitis is that of a heavy dense bone which looks somewhat moth eaten. Sequestrums or pieces of dense ragged dead bone may be seen lying free or incorporated in the new bone formation.

If the organisms which reach the bone are of low virulence when compared to the resistance of the tissues, a similar but less extensive process results. Here as before an abscess forms, but its spread is considerably limited by the surrounding bone. Thus we have a localized osteomyelitis which shows many of the x-ray changes previously noted but to a lesser degree. The radiolucent zone produced by absorption is seen and sclerosis of bone is present in the adjacent area. If the abscess lies near the cortex the periosteum may be stimulated sufficiently to produce the formation of new periosteal bone. Here the process usually stops and the extensive changes of chronic osteomyelitis are not seen.

Another form of osteomyelitis that is occasionally seen is Garre's or chronic sclerosing osteomyelitis. In this disease there is quite a different pathologic process and thus a different x-ray picture. The infection is primarily a diffuse process involving a portion or all of the shaft of a bone. Usually no abscess is found and the disease manifests itself on the x-ray film chiefly by its bone producing activities. The osteogenic cells of both the periosteum and the cortex are stimulated and the new bone which is laid down produces a very heavy dense structure. This process may be extended to produce almost complete obliteration of the medullary canal.

The x-ray diagnosis of osteomyelitis is unfortunately not always simple, and changes which occur early in the disease are frequently mimicked by several other pathologic states. It is important, though not always possible, to differentiate these because in almost every instance both the prognosis and the accepted treatment differ greatly from those of pyogenic osteomyelitis. From an x-ray point of view there are three groups of diseases which frequently cause differential difficulties. These are (1) other infections, (2) bone tumors and (3) diseases of the reticuloendothelial system.

In considering other bone infections there are two which cause most of the difficulties. The first of these is syphilis in either the congenital or the acquired form, and it is the tertiary stage of these conditions which may simulate so closely the changes of osteomyelitis. Syphilis begins in the bone as a periosteal infection which stimulates the periosteum to proliferate new bone. In addition there is a true osteitis, which results again in bone osteogenesis in the cortical and medullary bone. Gumma, single or multiple, may appear and destroy bone; thus the final result of these processes as seen on the film is a thick irregularly dense moth eaten bone which may completely simulate the picture of osteomyelitis, and it is frequently impossible to differentiate the two without the aid of the clinical findings.

The second bone infection which offers diagnostic problems is tuberculosis. Usually tuberculosis of bone is not a difficult diagnosis to make, but in the relatively rare tuberculous osteomyelitis of a long bone a picture

closely resembling pyogenic osteomyelitis may result. There is one very helpful factor in differentiating tuberculosis, and that is that its bone destructive qualities usually surmount its bone producing activities. Thus on the film we are more apt to see radiolucent bone rather than the dense sclerotic bone of pyogenic osteomyelitis. However, it occasionally happens that a tuberculous abscess develops in a long bone, usually in the metaphysis. This may then go on to produce bone absorption, periosteal bone proliferation and endosteal bone formation. It is readily seen that these processes may produce the so-called characteristic picture of osteomyelitis.

Bone tumors form the second group of diseases which must be considered in conjunction with pyogenic osteomyelitis, and we are of the opinion that these are the most important conditions for differentiation. Here the prognosis is of course grave and incorrect diagnosis may lead to a sorry situation.

There are many forms of bone tumor, but we propose to discuss here only those which offer the greatest diagnostic problems. There are several clinical similarities of bone tumors and osteomyelitis which add to the difficulties of diagnosis. The peak age incidence of the two groups is just about the same, and the location of the disease tends to follow a similar pattern. The onset of clinical symptoms may be identical in the two conditions. Thus we may see a young patient with the symptoms of acute osteomyelitis even with an elevated white blood cell count, and if one is not careful a diagnosis of osteomyelitis may be made when the underlying pathologic condition is really that of a bone cancer.

The first tumor we should like to consider is osteogenic sarcoma. This tumor arises from the osteoblast of the periosteum, and in many cases the predominant cell depends on the stage of development of the osteoblast at the time the tumor began. This however is not always the rule, and a tumor may frequently change its cellular characteristics as the neoplasm advances. Thus we may find a growth which shows a preponderance of fibrous tissue, cartilage or bone, or a mixture of these three. If the tumor consists primarily of only one of these tissues, the x-ray picture is differentiated from osteomyelitis without too much difficulty. However, in the mixed types a different situation exists. The most confusing picture occurs when the tumor invades the bone early in the disease and produces bone destruction. When this is coupled with new bone production within the tumor and along the periosteum a pathologic process is encountered the x-ray appearance of which taxes the most astute diagnostic eye. We often hear of the "sunburst" picture of osteogenic sarcoma, and when this occurs the diagnosis is usually easy. However, new bone formation in spicules perpendicular to the cortex is not limited to osteogenic sarcoma nor is it always present in this disease. Any disease process which slowly lifts the periosteum from the bone so that the capillaries which run from the periosteum into the bone are not torn away, and then new bone is apt to be laid down along the course of the capillaries. Thus one sees that the physiologic mechanism of the sunburst effect is not limited to any one pathologic state.

A second tumor of bone to be considered is Ewing's sarcoma, or preferably Ewing's endothelioma. The exact source of origin of this tumor has long been a disputed point, but today most workers believe that it is not a true sarcoma and that it arises from the endothelial cells of the blood vessels or lymphatics of bone. Although the growth may begin subperiosteally, it usually arises within the medullary cavity. In the latter case, while it stays within the confines of the cavity no x-ray changes are demonstrable. However, it sooner or later invades and destroys adjacent bone, and when the growth approaches the subperiosteal zone the periosteum is stimulated to activity and new bone is laid down. In addition, where bone is being destroyed there is also the stimulus to produce new bone; and though this is minimal in Ewing's tumor it nevertheless is present. It is at this stage in the development of the cancer that the greatest x-ray problems are encountered, for here just as in osteomyelitis we find the same three changes on the x-ray film, namely bone destruction, bone formation and periosteal proliferation.

A third tumor which occasionally offers diagnostic problems to the radiologist is the metastasis of neuroblastoma. It is the early stage of the single metastasis which causes the most difficulty. It is true that the growth is primarily osteolytic, but, as is always seen in bone destruction, the impetus to produce new bone is present and the final result may be a pathologic process the x-ray appearance of which is not at all unlike that of osteomyelitis.

There remains one group of diseases which may simulate the changes of osteomyelitis, and this group includes several related entities all of which show either primary or secondary changes in the reticuloendothelial system. This group includes the leukemias, the lymphomas, the xanthomas and the congenital anemias. The characteristic x-ray picture of any one of these is usually readily differentiated from the others and from osteomyelitis, but each may have a stage in its development when one sees bone destruction, bone production and periosteal reaction, in other words the picture of a relatively early osteomyelitis.

SUMMARY

Osteomyelitis produces changes in the x-ray film which can be explained on a sound physiologic and pathologic basis, and these changes are usually sufficiently characteristic to lead to a correct diagnosis. There is, however, a definite stage in the early development of hematogenous osteomyelitis when the x-ray picture is one which may be closely mimicked by several other pathologic conditions. It is unfortunate that this period is frequently at a time in the course of the disease when clinical symptoms and signs do not point to a definite diagnosis. Furthermore, the nature of several of the diseases whose films parallel those of osteomyelitis is such that a mistaken diagnosis and the resultant incorrect therapy may bring on a very unfortunate end result.

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The Heart.—When the modern physician speaks of the cause of death as cardiac or respiratory, he refers to the mechanical failure of these organs to continue performing their normal function. But when the ancient man spoke of these organs as not active he was alluding to the departure of the soul from them without any regard to their functional condition. The difference between life and death was the silence of the heartbeat, a phenomenon primitive man could not miss and the cause of which he could not explain except by the presence of the soul in the organ. The heart, therefore, was considered by many ancients the source of emotion, intellect, wisdom and courage.—Gordon, Benjamin Lee: The Romance of Medicine, Philadelphia, F. A. Davis Company, 1944.

SURVEY OF MEDICAL CARE IN A WAR INDUSTRY AREA

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The exigencies of war have placed a real strain on medical services and facilities throughout the country. This is particularly true in some of the war industrial areas that have experienced considerable increases in population. The extent of this strain in one Pacific Coast area is indicated by the data given here.

The study was undertaken by the California State Department of Public Health at the request of the Coordinating Committee on Medical Care of the California State Procurement and Assignment Service for Physicians, Dentists and Nurses. It was designed to provide information relative to the overall medical care situation in the area under study, with particular emphasis on the adequacy of physicians.

The picture had been somewhat clouded by the fact that an unknown proportion of the population was provided medical care under a prepayment plan. It had not been possible to determine even approximately the population remaining to be cared for through private practice channels.

The study was designed to provide information in the following areas:

1. The total population to be cared for.
2. The proportion of the population reached through the prepaid medical care plan and through private practice channels.
3. The physician personnel available to care for each of these two segments of the population.
4. The volume of service being rendered each group (prepaid medical care group and community at large group).
5. The adequacy of hospital facilities.
6. The consumer reaction to medical care being received.

MATERIALS AND METHODS

The survey covered the area comprising the cities of Richmond, El Cerrito and San Pablo in Contra Costa County, Calif. The Permanente Metals Corporation comprises the most extensive industry in the area, although there are a number of other large industries, as oil refineries and automobile assembly plants. The survey was conducted during the week of Jan. 17-22, 1944. The data on patients seen by physicians were for the preceding week of January 9-16, inclusive.

The survey team consisted of three physicians, one public health nurse and one medical social worker. Data were collected from physicians by a personal call to each physician's office, during which visit a questionnaire was completed which showed the number of patient visits to the office and home calls made by the physician the preceding week. The data from the prepaid medical plan of the Permanente Foundation were taken from the December 1943 monthly report of that organization supplemented by data prepared by representatives of that organization. Hospital data were obtained by direct visits to the hospitals and interviews with hospital superintendents. Other medical care agencies, such as the local chapter of the American Red Cross, the local community health center, the health department and the county welfare department were visited by representatives of the survey team and opinions obtained from workers in these agencies and from patients and other people being served during a three day period by these agencies.

The consumer reaction to the medical care being received in the area was sampled by means of a questionnaire distributed through the sixth grade students of the public schools in the area. The same questionnaire was used in the offices and clinics of the health and welfare agencies just noted. It was also completed on a limited number of families contacted by direct home calls.

The Regional Housing Authority and its constituent units were also contacted and medical care problems coming to the attention of this agency noted.

POPULATION DATA

The most recent and reliable population estimates obtainable were for Richmond 105,000, El Cerrito 16,626 and San Pablo 20,000, with a total for the area surveyed of 141,626.

For the purpose of the compilation of data the figure 140,000 was adopted as being probably the nearest round figure estimate of the population. It appeared that this was at least within 10,000 of the then current actual population and probably was a conservative estimate. The current population for the area represents approximately a threefold increase over the 1940 census.

SOURCE OF MEDICAL CARE

From a study of the total shipyard population and geographic distribution of residence of shipyard employees and knowing the percentage covered by the prepaid medical plan, it was estimated that 28,000 people living in the survey area received medical care through the prepayment plan of Permanente Foundation. This left 112,000 in the community at large to be provided with medical service.

PHYSICIAN POPULATION

It was found that 29 physicians were engaging in private medical practice in the area. Several of these were formerly retired physicians who were seeing very few patients; others maintained offices outside the surveyed area and therefore devoted only part time in the area. A study of the practice of each physician was made and the percentage effectiveness of each estimated. On this basis it was estimated that there were 24 fully effective physicians available for private practice in the area.

By applying similar estimates it was found that approximately 60 fully effective physicians were caring for the 71,139 patients covered by the Medical Plan of the Permanente Foundation.

PHYSICIAN-POPULATION RELATIONSHIP

Using the foregoing figures, the physician-population relationships are shown in table 1. These figures indicate that there were approximately four times as

The opinions expressed in this report are those of the authors and do not necessarily indicate the opinions of the Coordinating Committee on Medical Care of the California State Procurement and Assignment Service for Physicians, Dentists and Nurses, for which committee the survey was made

Dr. Edith Young, Miss Nadine Small and Miss Helen Hall assisted in the field work on this study. Dr. Harold A. Fletcher, chairman of the Procurement and Assignment committee, Dr. Milton Rose, Dr. W. P. Shepard, Dr. Wilton L. Halverson and Dr. Morton Gibbons were members of the subcommittee appointed to assist with the survey and gave valuable suggestions and assistance.

many physicians per unit of population available to the shipyard workers as to the population of the community at large.

VOLUME OF MEDICAL SERVICE PROVIDED

In order to estimate the total volume of the patient load seen in the office and at home, each physician in the area was asked to provide information on the number of patient visits to the office and the number of home calls made during the preceding week. In most instances actual figures were given day by day. In other instances estimates were given. Since the latter compared quite favorably with the actual counts from comparable practices, this estimate is thought to be fairly close to the actual facts. In arriving at these figures our table was compiled, giving age of physician, type of practice, daily office visits and daily home visits. Hospital cases were not included.

TABLE 1.—*Physician-Population Relationship in the Richmond, El Cerrito, San Pablo Area of California, January 1944*

	Community	Permanente Foundation
Population to be served	112,000	71,139
Total physicians available	24	60
Population per physician	4,666	1,185

For the Permanente Foundation the December monthly report, which was provided to us, was the source of the data. It is emphasized that these figures give only quantitative information and in no way indicate the intangible qualitative factors, which latter we did not attempt to evaluate. The data are shown in table 2.

The figures shown are exclusive of the work done at the first aid station at the shipyards, for which 6 physicians were employed full time. Using these figures, which would appear to represent essentially comparable services, the office or clinic and home calls per physician per month were calculated by dividing the number of visits by the number of physicians providing the service. These are figured on a basis of what has been estimated to be 100 per cent effective physicians and also eliminating the 6 physicians at the first aid station. These figures are also shown in table 2.

TABLE 2.—*Volume of Medical Service Provided in the Form of Office Visits and Home Calls*

Volume of Service Rendered	Community	Permanente Foundation
Total estimated office or clinic visits per month	25,350	34,679
Total estimated home calls per month	1,950	1,429
Total office or clinic and home calls	27,300	36,108
Number of physicians providing service	24	54
Patient visits per physician	1,137	668

If the services rendered at the first aid station at the shipyards are also included, a somewhat different comparative picture is presented. For the month of December a total of 130,652 patient visits to first aid station, clinics and home calls were recorded in the Permanente report. Using this figure, the patient visits per physician at Permanente becomes 130,652 divided by 60, or 2,177.

We were also interested in calculating the volume of medical service per thousand of population for the two population groups. These calculations are shown in table 3. The figures in table 3 demonstrate that on a strictly quantitative basis the subscribers to the Health Plan were seeing a physician much more frequently than were the people in the community at large. If the service rendered at first aid stations is included, there were almost seven times as many patient visits per thousand of population in the Permanente group as in the Community group. This difference is only half as great if the industrial cases are excluded from the Permanente group, since 50 per cent of all treatments given by the Permanente physicians are industrial in nature. It would appear that for illness of non-industrial type the subscribers to the Medical Plan receive three to four times more medical treatments than do people in the community at large if the service rendered at the first aid stations is included. If first aid stations and industrial services are excluded the visits per thousand of population are almost comparable (244 vs. 254).

PHYSICIAN OPINION RELATIVE TO ADEQUACY OF MEDICAL CARE IN THE AREA

All physicians practicing in the area were interviewed either in person or, in a few instances, through telephone calls. An attempt was made to estimate the number of requests for service that are turned down daily. It was estimated that at least 100 calls per day, or approximately 2,600 to 3,000 per month, are not being accepted. Our impression is that this figure is extremely conservative. All physicians expressed concern over the pressure of work, and several wondered how long they might be able to keep going at such a pace. We found the waiting rooms of most doctors visited filled to capacity, and in some instances patients were waiting in the halls.

TABLE 3.—*Volume of Medical Service per Thousand of Population in the Community and Permanente Population Groups*

	Community	Permanente Foundation	
		Total	Nonindustrial Only
Estimated population served	112,000	71,139	
Estimated clinic and home calls (exclusive of first aid stations)	27,300	36,108	18,059
Visits to physicians per thousand of population	244	508	254
Home calls per thousand of population	17.4	20.1	
Total service including first aid station	.....	130,652	65,326
Total treatments per thousand of population (clinic, home and first aid)	.....	1,840	920

The majority of the physicians expressed the opinion that additional doctors should be assigned to the area. The most urgent need expressed was for some relief from the late afternoon, evening and night calls. Some type of an emergency setup whereby the evening and night calls could be taken care of was almost unanimously proposed. The present handling of emergency work was considered by all as being quite inadequate.

Most physicians felt that the assigning of additional doctors to do general practice would do little to remedy the situation unless a significant number is assigned, as the demand for medical service would pyramid as the service became more available. No one ventured an opinion as to the total demand for medical service if it were readily available.

Physicians who had been brought in to work in the emergency room of the Richmond Hospital had built up practices so rapidly that within a month or so they were no longer interested in remaining at the hos-

pital on an emergency basis. Indications were that it would take about a physician a month to keep this service going unless the assignment was made under an arrangement that would guarantee continued service in the emergency unit.

A significant number of physicians were much concerned over the lack of adequate hospital facilities. Lack of facilities for care of emergency cases was repeatedly mentioned. There were several comments that beds for colored patients were particularly difficult to obtain.

Opinions concerning night calls varied from statements that many of the night calls were unnecessary to assertions that the chief difficulty was that patients wait too long before calling a doctor. There were some opinions expressed that patients do not know how to go about getting a doctor.

In addition direct interviews were held with Housing Authority representatives, representatives of the residents in the housing units and by direct home calls to over 100 homes scattered throughout the area.

The questionnaire was distributed through the following channels:

1. Through the sixth grade of nine selected schools which draw students from the major residential areas.
2. To the mothers attending well baby conferences covered by the public health nurses of the health departments.
3. To patients at the clinics at the Richmond Health Center.
4. To the mothers who bring their children to child care centers that are under the direction of city school nurses.
5. To persons calling for assistance, during the three days of the survey, from the Contra Costa County Social Service Department and American Red Cross.

TABLE 4.—*Items Included in and Data Tabulated from Questionnaire Distributed Throughout the Area Surveyed*

	Schools			Other		
Total questionnaires distributed	1,640			260		
Total questionnaires returned	914 (55.7%)			260		
Total number of people represented	4,400			963		
Average number per family group	4.9			3.6		
		Percentage			Percentage	
Answers checked	Yes	Yes	No	Yes	Yes	No
1. Do you have a family physician where you now live?	330	39.3	510	102	39.2	158
2. Have you or one of your family seen a local physician for the purpose of obtaining medical care within the past year?	650	70.0	264	225	85.2	39
3. Where was the doctor seen?						
Office	461	42.0	...	156	45.1	...
Home	246	22.4	...	81	23.4	...
Hospital	225	20.5	...	78	22.5	...
Shipyards	166	15.1	...	31	8.9	...
Total	1,308	100.0		346	100.0	
4. Have you or your family had any difficulty in obtaining a physician within the past year?	120	16.6	603	69	32.0	149
5a. Was your attempt to obtain a physician successful?	166	67.5	82	70	76.0	32
5b. How many physicians did you call before obtaining one?						
Total reported	519	....	...	245	....	...
Average number of calls per report	...	1.8	...	...	2.6	...
5c. How long after you called was the physician seen? (See text for data)						
6. Have you felt the need for a physician's services during the past year in this area but for one reason or another failed to call one? If the answer is "yes" please state the reason (See text for data)	174	28.4	439	50	25.0	148
7. Has any member of your family been a patient in a hospital in the past year in this area?	187	21.7	663	64	26.4	178
8. Were you able to obtain hospitalization when needed?	179	78.5	49	62	79.0	17
9. Was hospitalization delayed because of lack of beds at the hospital? If answer is "yes" for how long? (See text for data)	25	13.1	165	18	31.6	39
10. Number of questionnaires bearing comments (Do you wish to make any comments concerning the medical or hospital care received by your family? If so, please use the back of this sheet)	153	....	...	59	....	...

HOSPITAL SERVICE

From the initial conference in the area to the end of the survey the problem of lack of hospital facilities was constantly brought to our attention. Visits were made to all hospitals in the area. Total bed capacity and percentage of occupancy were determined and availability of hospital service was studied. Opinions of representatives of various agencies, physicians and hospital administrations were elicited. The composite picture served to indicate an acute shortage of hospital facilities for the expanded population. The problem, however, was quite confused, owing to the utilization in varying degrees of hospital facilities of the contiguous Oakland-Berkeley area. For this reason no statistical data are included in this report.[1]

CONSUMER OPINIONS CONCERNING MEDICAL CARE

Information bearing on the attitude of the public in the area concerning the adequacy of physician and hospital service was obtained from several sources. A questionnaire was distributed through several channels.

1. The data compiled are available in the mimeographed report issued by the state Procurement and Assignment Service.

In items 2 to 5 inclusive it was possible to have some one who had been in conferences concerning the survey actually on hand to answer questions and assist in completion of the questionnaire and to record problem cases. These groups were designed to serve as a check on the data obtained through the schools. The summary tabulation is given in table 4. The data tabulated from the questionnaire are divided into those sent through the schools and the remainder covered under items 2 to 5 inclusive.

The results of all questions are shown in the table except 5c, the second part of questions 6 and 9 and question 10. It will be noted that only 55.7 per cent of the forms distributed through the schools were returned. It may be argued that this does not therefore represent the true picture, as the results may be unduly weighted by persons who did not encounter difficulties. The fact that comparable results were obtained from the remaining groups in which there was 100 per cent return of questionnaires is indicative that the school results are representative. It must be borne in mind, however, that these questionnaires provide information only on family groups. Single men groups, elderly per-

sons and married people not having children in school are not represented.

It will be observed that approximately 60 per cent of the families did not have a family physician. In over 70 per cent of the families some member had obtained medical care in the past year. About 65 per cent of these physician visits were made in the office and home. Almost 17 per cent of the one group and 32 per cent of the other group had encountered difficulty in obtaining a physician. Attempts to get a doctor were successful in only about 70 per cent of instances. Approximately one fourth of the people had failed to call a physician when needed. Some of the reasons noted for not calling a physician are given later. Slightly over 20 per cent of families had had one or more members in the hospital during the past year. Eighty per cent stated they had been able to obtain hospitalization when needed

Under 5b as many as 30 calls to physicians were recorded before one was obtained and other figures noted were 20, and in several instances 10, 9, 8, 6 and 5.

Under 5c the waiting period varied from a few minutes to fifty-four days, but periods over twenty-four hours were noted in only 29 instances out of the total questionnaires returned. In 26 instances it was reported that the physician failed to call after the patient was advised he would do so.

Under question 6, persons were asked to state the reason why they had not called a physician. There were 143 answers given to this question. In 31 instances it was stated that doctors were too busy or so overworked: 24 stated that physicians were too difficult to get; 21 indicated that doctors would not make home calls; in 12 cases it was noted that one had to wait too long to get to see a physician: 6 times the comment was noted that appointments had to be made so far in advance; 5 stated that they did not know any doctor in this area; 5 others that there were not enough doctors, and 5 stated that it took too much time to get a doctor; in only 5 cases was an economic reason given for not calling a doctor. The remainder were various reasons mostly revolving around the general problem of time and difficulty involved. In only 1 case was poor transportation mentioned.

The following figures are those noted indicating wait before hospitalization was obtained: Days, three, three, two, five and seven. Weeks, two, two, two, four and two. Months, three and three.

There were 158 comments recorded in response to item 10. Owing to the wide diversity of opinions, no attempt at classification has been made. In general they followed the same pattern as those noted under question 6. Difficulty in getting a doctor for emergency and night service, the long waits in doctors' offices, statements concerning doctors being overworked, difficulty in getting immediate hospital service and shunting from agency to agency were comments most frequently noted. In a significant number of instances it was commented that the shipyard workers are fairly well taken care of but that there are not enough doctors for their families. In several instances it was stated that workers are leaving the area because of lack of doctors and medical care. Surprisingly few of the comments appeared to be of the complaint type.

As indicated, the data obtained from the questionnaires was supplemented by direct interviews. In these interviews specific case histories were obtained in an effort to determine the exact problems when there was difficulty encountered in obtaining medical attention. The representatives of one of the housing unit citizens' associations provided a number of such specific case histories. These merely substantiated the statements noted on the questionnaires that it was very difficult to obtain physician service for evening and night home calls, that in occasional cases real emergencies encountered considerable delay in achieving medical attention, that there were frequently long waits, whether in doctors' offices or at the Permanente Hospital clinics.

In another group of direct interviews 102 direct home calls were made in various areas of the city. These visits only served to confirm the general trend of information obtained from the questionnaires. The same general problems were encountered and a number of problem cases were cited. These revolved for the most part about the difficulty and delay in securing physician and hospital services.

OFFICIAL HEALTH SERVICES

There were repeated comments encountered throughout the survey concerning the inadequacy of the local health department. It was found that despite the fourfold increase in population in the city of Richmond the health department had less personnel than at the beginning of the war. Since the survey, the health department has been completely reorganized and has become much more adequately staffed.

COORDINATION OF SERVICES

Repeated comments were heard relative to lack of coordination of even existing medical facilities and services. Each agency has been carrying on its own activities, frequently without regard to other agencies. There has seemingly been considerable reluctance to accept responsibility by the various agencies. The need for a medical coordinating council or central medical clearing agency was repeatedly expressed by various persons interviewed. In several instances it was suggested that this should be the city health department.

Many of the interagency complaints and criticisms appeared to members of the survey staff to be based on inaccurate or inadequate information or frank misunderstandings. It appeared that perhaps the majority of such problems could be readily resolved if representatives of the various agencies could come together, define the limits of their respective responsibilities and discuss the areas wherein friction develops.

COMMENT

The problems in medical care presented in the district considered in this study are particularly interesting because of the coexistence of a prepaid medical care plan covering a considerable segment of the population alongside the private practice system serving the remainder of the people. The data that have been presented demonstrate that the recipients of the prepaid medical plan are receiving a much greater volume of medical attention than are the people in the community at large. The Permanente Foundation was in operation in the Richmond area before the program of the Procurement and Assignment Service was inaugurated. We were advised by the chairman of the Procurement and Assignment Service that it had been recognized that the Permanente Foundation was fulfilling a critical need in the area by way of insuring the continued effectiveness of the workers in the vital shipbuilding industry. Therefore the Procurement and Assignment Service had cooperated in every way to insure the continued effectiveness of the Permanente Foundation program during the present emergency. This probably accounts for the allowance of one phy-

sician to 948 employees in the shipyards, in contrast to one physician to 4,666 civilians in the community at large.

Ciocco and Altman [2] have reported statistics on the patient load of private medical practitioners in Maryland, the District of Columbia and Georgia. These data were compiled from surveys conducted near the end of the first year of the war (August to December 1942). Since that time the problem of providing adequate physician service has become much more acute in many areas of the country. This is particularly evident from the study of physician population and load of medical work being done in the areas here studied. Whereas these workers found that the average weekly patient load was 111 in Georgia, 115 patients in Washington, 119 in Baltimore and 132 in Maryland, the patient load of the physicians in the area here studied was at least twice this number (1,185 per month). These authors also indicated that in order to maintain the then current volume of service the number of persons per physician could not be increased beyond 1,200 and 1,500 in Maryland and 2,000 to 2,400 in Georgia. It should be noted that this had been increased to 4,666 persons in the surveyed area here reported. The data clearly indicate that the demand for medical service is not being met, just as the demand for many services and commodities in other fields during this wartime period are not being met. Despite these facts there were relatively few cases brought to the attention of the survey team indicating real suffering or indicating real danger to the life and health of people in the community as a result of the limited medical service available. It would thus appear that there is a rather wide margin between the level of medical service that the community has been accustomed to and the service that on a temporary basis at least will result in significantly endangering the health of the community.

It would appear that in this war industrial area the cost of medical care was at the time of the survey not a significant factor. As already indicated, in only 5 instances was this factor even mentioned by people interviewed or on the questionnaires returned. For this reason the comment has already been made that the total volume of medical care that would be utilized if it was readily available could not be estimated.

It might be noted, however, that with a fourfold increase in the population there had actually been no increase in physicians in civilian private practice. This fact, coupled with the increased average income of the population, would seem to indicate that in all probability at least four times as many physicians in private practice would be kept busy if they were available.

If we apply to the area under study the calculations of Ciocco and Altman for the Maryland area, we have the following comparisons: In Maryland approximately 500 patient visits per physician monthly was estimated to be the reasonable maximum. In the surveyed area approximately 1,100 patient visits per physician monthly were recorded. The authors calculated that 1,200 to 1,500 persons per physician was a reasonable maximum in order to maintain the approximately perwar level of service; in the surveyed area there were approximately 4,700 persons per physician. Thus, despite the fact that physicians were seeing twice as many patients there were still less than half as many total visits per thousand of population in the surveyed area as in the Maryland district studied by Ciocco and Altman.

Another factor that complicates the picture of medical care in the area surveyed, particularly in the war industry group, is the fact that workers in these industries have been recruited from rejects for military service, from the older age group of the population, from women workers who are not accustomed to the type of work in which they are engaged and from areas in the Southern states where the level of individual medical care appears to have been low, resulting in the accumulation of illnesses and defects requiring medical attention. Thus there has been a selection of a population needing medical care. All these factors have resulted in an increased demand for medical care, particularly on the part of the shipyard workers. These factors, plus the more ready availability of the service and greater number of physicians per unit of population, probably account for the fact that there were seven times as many services rendered under the shipyard health plan as were received by the civilians in the community at large.

Another factor that was frequently called to the attention of the survey group was the fact that individuals from the area mentioned were not too well acquainted with how to utilize the medical facilities that were available. Many of these people do not know what to expect from a physician, are reluctant to follow advice and have no confidence in medical care provided, with the result that local physicians had become reluctant to handle them. In many instances it was found that patients had resorted to subterfuge and misrepresentation in order to secure medical service. In some of the housing districts some of the physicians were reluctant to accept calls at all, owing to such repeated instances of such subterfuge and misrepresentation.

The study also indicated that the Negro medical care problem was very acute and that facilities for the care of these people, from the standpoint of both hospital and medical facilities, were quite inadequate. There had been a considerable influx of Negro population within the preceding six to nine months into an area that had been almost entirely composed of white persons in the past. The facilities for their care had not kept pace with such an influx.

Another interesting item noted was that physicians frequently complained that patients waited too long before calling, yet at the same time there were numerous complaints that the majority of the calls were unnecessary. It is probable that the majority of the people could hardly be expected to differentiate between serious and minor illnesses. The general level of lay education in the medical field will probably have to be increased before any headway could be made in solving this problem.

Another factor that stood out in bold relief was the apparent lack of information concerning the medical services that were available. The community organizational and coordinating services had not kept pace with the expansion of the population.

One of the interesting findings was that we encountered so little in the way of complaints on the part of the public regarding the limited medical services that were available. Everywhere there was encountered the attitude that this limitation was part of the problem of being at war. With rare exceptions there was a feeling of sympathy toward the physicians of the community and a desire to limit request for service to real

2. Ciocco, A., and Altman, I.: Statistics on the Patient Load of Physicians in Private Practice, J. A. M. A. **121**: 506-513 (Feb. 13) 1943; The Patient Load of Physicians in Private Practice: A Comparative Statistical Study of Three Areas, Pub. Health Rep. **58**: 1329-1351 (Sept. 3) 1943.

problems in order to save the time and effort of the physician. This was particularly true in the population group dependent on physicians in civilian practice. There were hardly any complaints registered regarding the quality of the care, once a physician was secured.

ADDENDUM

Dr. Harold A. Fletcher has provided the authors with the following information relative to action taken by the Coordinating Committee following the submission of the survey report and has granted permission for it to be added as an addendum to this report:

"The Coordinating Committee of Procurement and Assignment Service sent a copy of the survey and the conclusions of the Committee to the Council of the California Medical Association. The Coordinating Committee recommended and urged that the California Medical Association take steps within itself and its component county medical societies to remedy the shortage of medical care. The Council of the California Medical Association immediately requested the California Physicians' Service to institute an emergency medical care service in Richmond to cover that large element of population which was not receiving medical care from either the local physicians of Richmond or the Permanente Foundation program. The California Medical Association financed the inauguration of this service by California Physicians' Service and underwrote any deficit which might occur for a period of ninety days or longer if the needs required. The California Physicians' Service inaugurated this service on May 1 in spite of a good many delays and obstructions due to difficulties in obtaining quarters, telephone service, etc. During May, one full time physician and one full time nurse were on duty from 6 to 11 in the evenings and from 2 on Saturday afternoon to 8 o'clock on Monday morning. This service was carried out in spite of not having a telephone exchange. Patients were charged fees on the basis of a modified fee schedule. The income for the month of May was $134.50 and the operating expenditures were $1,135.00, a loss of $1,000.50. During June a twenty-four hour service was initiated seven days a week, with two physicians and two nurses, one physician sleeping in the center. Ten thousand cards notifying families and groups of the availability of the medical service were distributed. Total income for the month of June was $402, and the total operating expense was $1,553.35, an operating loss of $1,151.35. During the month of July there were two doctors and two nurses for the same service. The income was $934.40, with an operating cost of $1,865.00. Operating loss was $930.60. There has been a steady increase in the number of patients applying to this service for medical care, but as yet there is a definite operating loss which the California Medical Association is underwriting. It is hoped that, with the preliminary stages of this service overcome, the service will be a self-supporting project, and it is hoped that the California Medical Association will continue its backing until this result is obtained. It may be stated, however, that unless the service becomes self supporting in a reasonable period of time the question arises as to whether this added service was as necessary as would appear from the information revealed in the survey."

It should be noted that the service described was established for emergency medical care only. During the first three months of operation there were only 1.3 calls per patient. Patients were referred to other physicians in the community for any conditions requiring follow-up care or hospitalization. There is perhaps some question whether or not such a strictly emergency service can be made to pay its way. Some plan of municipal subsidy may be necessary if this service is to be maintained.

Clinical Notes, Suggestions and New Instruments

INTRAHEPATIC OBSTRUCTIVE JAUNDICE FOLLOWING MAPHARSEN, WITH DEVELOPMENT OF A SPRUELIKE SYNDROME

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In a case of jaundice it is of paramount importance for the surgeon to differentiate extrahepatic biliary obstruction from other causes, since the decision to operate frequently is decided by this criterion. Fairly accurate indexes for such differentiation are available, but occasionally the information obtained will be misleading. Such is the series of cases of postarsphenamine icterus reported by Hanger and Gutman.[1]

Their cases presented the typical clinical and laboratory evidence of obstruction to the extrahepatic biliary tract, and for that reason several of their patients were operated on. No obstruction was found in these cases, however, other than pronounced bile stasis in the canaliculi of the liver.

The importance of preventing unnecessary laparotomies prompts us to draw attention again to the syndrome of intrahepatic obstructive jaundice. For this reason we wish to place on record a case which was typical of those described by the authors mentioned and which also presented for a time in the clinical course some of the manifestations of sprue.

REPORT OF CASE

A Negro aged 27 was found to have positive Kahn and Wassermann tests for syphilis on induction into the Army. Treatment was begun with mapharsen and a bismuth compound. Eight hours after the first mapharsen injection he experienced severe headache, paresthesias, chilly sensations and anorexia. Four hours after the third mapharsen injection he felt faint and nauseated and again experienced paresthesias, severe headache and chills and developed conjunctivitis.

Physical examination on admission to the hospital revealed that the patient was moderately ill and slightly icteric, with a temperature of 100.8 F. and a generalized erythema. There was some tenderness of the muscles and pain on flexion of the joints. The liver and spleen were not palpable.

Examination of the urine revealed a 2 plus test for albumin and a positive test for bile. The centrifuged sediment contained 2 to 6 renal epithelial cells per high power field, 0 to 2 epithelial cell casts and occasional leukocytes, leukocyte casts and coarsely granular casts. The red blood cell count was 3,800,000 per cubic millimeter, with 11.5 Gm. of hemoglobin per hundred cubic centimeters. The white blood cell count was 10,000 per cubic millimeter, with 69 per cent polymorphonuclear leukocytes. The stools were clay colored and negative for bile and urobilinogen. The qualitative urine urobilinogen test was also negative. The blood nonprotein nitrogen was 21.4 mg. per hundred cubic centimeters and the icterus index 57. The van den Bergh test showed an immediate direct reaction, the cephalin cholesterol test was negative and the prothrombin time was 22 seconds, normal control 21 seconds. The red cell fragility test showed beginning hemolysis at 0.36 per cent. There was no sickling.

Despite the clinical and laboratory evidence of obstructive jaundice and because of the history of recent therapy with

From the Laboratory and Surgical Services, A. A. F. Regional Station Hospital, Lincoln Army Air Field, Lincoln, Neb.

1. Hanger, F. M.: Serological Differentiation of Obstructive from Hepatogenous Jaundice by Flocculation of Cephalin Cholesterol Emulsions, J. Clin. Investigation **18**: 261 (May) 1939. Hanger, F. M., and Gutman, A. B.: Postarsphenamine Jaundice Apparently Due to Obstruction of Intrahepatic Biliary Tract, J. A. M. A. **115**: 263 (July 27) 1940.

arsenicals, the patient was placed under observation for four and a half weeks. During this time he complained of anorexia and occasional abdominal cramps. Six days after the last mapharsen injection his temperature fell to normal and remained so thereafter. The urine albumin, casts and cells cleared in two weeks. The liver and spleen were at no time palpable. A gastrointestinal series was negative, and scout films of the abdomen failed to reveal calcific densities in the region of the gallbladder. A roentgenogram of the chest was negative.

The icterus index rose gradually to 136. The stools were either yellow or completely clay colored, with either a negative or a faint trace reaction when tested for bile and urobilinogen. The urine urobilinogen remained persistently negative. One month after admission the serum protein was 8 per cent, with 4.9 per cent albumin and 3.1 per cent globulin. The hippuric acid excretion was normal (3.74 Gm.). The blood cholesterol was 300 mg. per hundred cubic centimeters. The glucose tolerance test was normal, at fasting level being 90 mg. per hundred cubic centimeters, at one-half hour 160 mg. per hundred cubic centimeters, at one hour 146 mg. per hundred cubic centimeters and at three hours 68 mg. per hundred cubic centimeters.

Because of the persistence of the signs of obstructive jaundice, it was felt that an exploratory laparotomy was indicated. This was done thirty-three days after admission. No evidence of extrahepatic biliary obstruction was found. The liver was smooth, green and of normal size. The common duct was explored with negative results, and a biopsy of the liver was taken.

Following operation the daily output of bile varied from 50 to 260 cc. Cholangiograms taken at this time by injection of dye through the tube revealed filling of the bile duct radicles. The icterus index gradually fell over a period of two months to 25. At the same time urobilinogen appeared in the urine. The patient's only complaint was itching, which was quite severe and lasted for three weeks, during the time the jaundice was clearing. The anemia and anorexia receded during parenteral liver therapy and high vitamin and iron intake by mouth.

Two months after admission the glucose tolerance test showed a fasting level of 74 mg. per hundred cubic centimeters, one-half hour 76 mg. per hundred cubic centimeters, one hour 80 mg. per hundred cubic centimeters, two hours 78 mg. per hundred cubic centimeters, three hours 78 mg. per hundred cubic centimeters. This was repeated five days later with essentially similar results. The patient was then given 50 Gm. of glucose intravenously with the following results: fasting level 71 mg. per hundred cubic centimeters, one-half hour 154 mg. per hundred cubic centimeters, one hour 79 mg. per hundred cubic centimeters, one and one-half hours 74 mg. per hundred cubic centimeters, two hours 71 mg. per hundred cubic centimeters, three hours 71 mg. per hundred cubic centimeters. The galactose tolerance test revealed 0.8 per cent reducing substance in the one hour specimen and none in the remaining four hourly specimens.

The blood calcium on two occasions was 8.2 per cent and 7.8 per cent respectively. The stools were voluminous and greasy but were gray brown, were positive for bile and contained numerous fat globules when stained with sudan III or scarlet red. A gastrointestinal series revealed a normal mucosal pattern in the small intestine.

The jaundice gradually cleared over a period of four and a half months, at which time the icterus index was 9. The glucose tolerance curve had returned to normal and the stools contained considerably less fat than previously observed, although abnormal amounts were still present. The excretion of bromsulphalein at this time showed a pronounced delay, there being 90 per cent retention at five minutes and 75 per cent at thirty minutes. Other liver function tests which do not depend on biliary excretion remained normal. Examination of the duodenal contents using the method of Lueders[2] revealed the presence of trypsin and lipase qualitatively. The patient had gained weight and felt quite well.

2. Lueders, C. W.: Quantitative Estimation of Enzyme Concentration in Duodenal Fluids: A Practical Clinical Method, Am. J. Digest. Dis. & Nutrition **2**: 224 (June) 1935.

The pathologic examination of the liver biopsy by one of us (E. D. F.) revealed that the biopsy specimen had a distinct green color and the cut surface showed numerous punctate areas of dark green pigment scattered throughout the parenchyma.

Microscopic examination revealed: 1. There was increased cellularity of the portal areas due to infiltration of lymphocytes and a few polymorphonuclear leukocytes and eosinophils. There was no dilatation or proliferation of the bile ducts. 2. Numerous scattered focal areas of swollen liver cells were seen around the central veins and in the midzonal regions but not around the portal areas. The most striking feature in these areas was the distention and plugging of the canaliculi with bile thrombi. The Kupffer cells in the region of the efferent vein were loaded with bile pigment. 3. Necrosis and inflammatory changes in the parenchyma characteristic of hepatitis were absent, as shown in the photomicrograph.

The diagnosis was pericholangitis and cholangiolitis.

Biopsy of the liver. The rounded dark areas are bile thrombi. There is much inspissated bile in the region of the central vein (I). The liver cells are enlarged except around the portal areas, but do not appear degenerated. The portal area (II) is infiltrated with lymphocytes. The small bile duct (III) is not distended and contains no bile.

COMMENT

That this patient presented the syndrome of obstructive jaundice is evidenced by the presence of a steadily deepening icterus with clay colored stools, no enlargement of the liver, and/or spleen, negative urine urobilinogen, immediate direct van den Bergh reaction, elevated serum cholesterol, negative cephalin cholesterol test, no increase in the prothrombin time, adequate excretion of hippuric acid and a normal serum protein partition. However, after the laparotomy it became evident that this case was an example of postarsenical jaundice apparently due to the intrahepatic obstruction described by Hanger and Gutman. The prolonged clinical course, the onset with fever and erythema following the third injection of an arsenical and the histopathology of the liver biopsy specimen were identical with the syndrome observed by these authors.

Although this syndrome is a comparatively uncommon reaction to arsenicals, the fact that it can occur makes it important in the differential diagnosis of the patient with obstructive jaundice who gives a history of recent treatment with arsenic.

Our attention was drawn to the spruelike syndrome when we found, during the period of gradual disappearance of the jaundice, that a previously normal glucose tolerance curve became flat. That the appearance of this abnormality was due to faulty absorption by the intestinal tract became evident when a normal intravenous glucose curve was demonstrated.

The probability that a deficiency in the absorptive mechanism existed in the intestinal tract was further emphasized by the appearance of voluminous greasy stools containing large amounts of fat during the time that bile was reaching the intestine and by the low blood calcium. The demonstration of the presence of trypsin and lipase in the duodenal contents suggests that the steatorrhea was not due to a deficiency of pancreatic enzymes. The absence of anemia and glossitis and the other B complex and fat soluble vitamin deficiences at this time can be attributed to the fact that the patient received liver extract and vitamin K parenterally as well as vitamin supplements by mouth during the month following operation.

Although the syndrome resembling sprue has not been previously described in cases of postarsenical jaundice due to intrahepatic obstruction, it is of interest to note that Farber [3] has observed a similar hepatic lesion in some cases of steatorrhea in infants. The possible etiologic relationship must await further observations.

SUMMARY

A case of jaundice following the injection of mapharsen exhibited the clinical and laboratory data consistent with the diagnosis of extrahepatic biliary obstruction. No extrahepatic obstruction was found at operation, but examination of the liver biopsy revealed pronounced inspissation of bile in the bile canaliculi.

During the course of the disease the patient developed a syndrome which resembled sprue in many respects.

Special Article

THE DOCTOR LOOKS AT HIS INVESTMENTS

WALTER J. J. SMITH

BALTIMORE

INTRODUCTION

The author, Mr. Walter J. J. Smith, is a graduate in the field of commerce of New York University, with the degree of Master of Comm. Sce. He was a member of the editorial staff of the *Financial World* from 1937 to 1944 and since that time has been supervisor of accounts for *Market Trends.*

An outstanding characteristic of the investment counsel field has always been the youthfulness of the "old men" supervising investment portfolios. But in this field—as in all others—the war has brought changes. The "old men" of finance are now in the armed forces, and the portfolios they formerly supervised have either been placed in the hands of other counselors already overburdened or else left to drift until the day when manpower mobilization becomes manpower demobilization. In either event a disservice, not a service, is being performed and the financial consequences of the action can only be imagined. We are assuming in this article that the doctor's portfolio is in the latter group. Since there is no substitute for competent and continuous investment counsel supervision, the following routine is not offered as a permanent "cure-all" for investment problems. Rather, the procedure is offered as a simple and satisfactory temporary method of supervision that avoids most of the investment pitfalls and makes minimum demands on the doctor's time.

In the light of the exhausting schedule being maintained by medical men in general, it would probably be no oversimplification of this investment problem to say that the physician should seek the freedom from worry and supervision achieved through the purchase of U. S. government bonds. But the average doctor will take one look at the return on such an investment and conclude that he can stand a little less security and a little more income. The result must be a compromise investment.

Now the question immediately arises as to how far down the investment quality scale he should go. In my opinion no doctor considering the purchase of bonds and preferred stocks has the financial or moral right to go under the type of security now included in the medium grade group. Profitable operations in speculative securities demand the individual's maximum attention, and competent medical practice also demands the doctor's full time and interest. Experience has proved time and time again that the professional man whose portfolio continues to be heavily weighted with speculative issues will inevitably become a less competent man in his profession. The reason is simply that no man can serve two masters.

At the present time, issues in this medium grade group—which is constantly being adjusted to the rate of "pure interest"—yield between 4 and 6 per cent in the case of bonds and 5¼ to 6¾ in the case of preferreds. Note that the reference is not to any conventional system of alphabetical rating but rather to the market's own rating of the worth of the securities in the light of existing money market conditions. For the time being, therefore, purchases in this section of the security list should be limited to bonds and preferred stocks qualifying in this class. By the same token, such securities should be sold whenever they leave the medium grade group either on the top or on the low side as a result of yielding less than or more than the limits set up. If this routine is adopted, it will be possible to secure yields more than twice as large as those obtainable on long term taxable Treasury's with only a nominal increase in risk, the reason being simply that a definite plan of "merchandising" the securities is being followed. It is also apparent that the supervisory detail is reduced to a minimum because of the arbitrary procedure. Last but by no means least in these days of heavy taxation, the capital gains and losses over a period of time will tend to cancel out.

Even though this type of security will represent at least the major part of a doctor's portfolio, it is admitted that a well balanced list should also include common stocks. Unfortunately, the relatively simple yardsticks used above are not applicable here. Although brief reference to the financial publications will show an endless array of forecasting mediums, the more successful investment managers base their purchases and sales on broad economic and psychologic factors. At least one service—looking inside the market itself for an indication of future trends—has reduced the investing public's anxiety or optimism (the prime moving factor) to a simple ratio and uses it as a forecasting tool. While the advantages of this method are obvious, most people have neither the time nor the inclination to engage in the dreary task of adding up long series of figures in order to arrive at the necessary ratios. But the general principles of (1) When to buy or sell and (2) What to buy or sell can be employed with profit.

For example, the Dow-Jones averages are the fever chart of business. Reading this business thermometer differs in no respect from any other chart with which the doctor is familiar. Here the danger zone constitutes points where major changes in investment policy must be effected. The years 1932, 1938 and 1942 were points of primary interest to the investor concerned

3. Farber, S.: Medical Progress; Pancreatic Insufficiency and the Celiac Syndrome, New England J. Med. **229:** 653 (Oct. 21), 682 (Oct. 28) 1943.

only with adjusting his portfolio to the long range swings in the market. Stated another way, these major turning points were of interest primarily to those anxious to catch most of the bull market rise but sidestep entirely the bear market declines. No close and continuous watching of market trends was necessary for such trading action. Although, in matters of this sort, long experience with the charts is of paramount importance if consistent success is to be secured, a victory model short-cut can be offered instead. There are four points to be remembered, and, if they can be kept clearly in mind, most of the investment pitfalls will be avoided. They are that: 1. Bull markets tend to run for an average of almost two years and increase the general level of security prices about 65 per cent. 2. Bear markets run almost one year on the average and show price reductions averaging 40 per cent. 3. Since these are only average figures and any specific bull or bear market may run longer or shorter and increase more or less than the figures shown, limit the potential loss in any security to 20 per cent. A penalty of this size for a poor guess is not pleasant medicine, but it does have the virtue of preventing a possible 40 or 50 per cent loss. 4. Note the trend in low grade securities against the high grade issues and the kind of securities that are the current favorites.

The first two points will enable the busy professional man to determine in a general way just where the market stands with respect to the "typical" bull or bear market both in duration and in extent of increase or decrease and gage his action accordingly. Obviously, considerably more caution must be exercised when buying into a bull market that has been boiling along for three or four years and has increased the general price level 70 per cent than when considering similar action in the same market if it has been moving along for only one year or even less and scored advances of only 10 per cent. Remember that the only good buying spot is the beginning of a bull market. As prices move up, profit possibilities become less and the risks of a loss correspondingly greater. In other words, proceed with increasing caution when buying into the later stages of a bull market and be prepared to move out in a hurry if the tide starts to run out, particularly if the "average" performance has already been realized and point 4 shows that speculative issues have dominated the market for a long time not only from the point of view of activity but also in the light of price gains registered.

Of course, the reverse comments apply in the case of a bear market. Never buy into a bear market that has just started, irrespective of the quality of the security being offered for sale. If you will check the records, you will find that the good stocks crashed in 1929 and 1937 along with the poor ones and it was no consolation to the holders of the good stocks to know that they did not go down as much. The fact was they could have been purchased at a better price later in the bear market. The advantage of point 3 is self evident. Point 4 is intended to be a quality test of the market. Admittedly conclusions based on the exact method suggested can only be approximate at best. The reduction of this figure to a calculated ratio is more desirable, but remember that such computations are time consuming, and "free time" is something a medical man does not have. I am attempting to show in a general way simple guideposts for temporary use until the portfolios in question can again be placed under professional supervision.

After the major question of when to buy is determined, the secondary question of what to buy arises. Early in a bull market the quality of purchases can be relatively lower, but the standards should be raised as the market gets into the "average" ranges indicated under the first two points. Also each issue should be selected with a view toward proper diversification within the portfolio, since an undue concentration of funds in any single issue is not sound. Obviously there is no cut and dried answer to that problem, since it will depend on the particular phase of the market at which the question comes up and also on the present composition of the portfolio in question. If the problem is one of what to sell, the answer is not difficult. The practical attack is to begin with the most speculative equities held and work up toward the more conservative securities, the extent of the action depending on the severity of the indicated decline. It must be remembered that there are times when the most desirable investment to hold is cash as well as times when one should be almost fully invested.

In a mechanism as complex as the security market and almost impossible to subject to laboratory analysis, no foolproof rules can be found. However, it is hoped that the guideposts mentioned here will enable "my doctor" to muddle through the constantly shifting financial and economic sands with at least average success until his "old man" of finance returns.

Council on Pharmacy and Chemistry and Council on Industrial Health

The Council on Pharmacy and Chemistry and the Council on Industrial Health have authorized publication of the following report.

AUSTIN SMITH, M.D., *Secretary,*
COUNCIL ON PHARMACY AND CHEMISTRY.

C. M. PETERSON, M.D., *Secretary,*
COUNCIL ON INDUSTRIAL HEALTH.

THE USE OF VACCINES FOR THE COMMON COLD

Status Report

The symptom complex usually termed the common cold is a frequently recurring source of distress and disability to most residents of temperate climates, and it is the cause of much industrial absenteeism and economic waste. In recent years so-called vaccination is the method which has received the greatest amount of study as a possible means of preventing or controlling the ravages of this condition. If any available vaccine has demonstrable value for the prevention of the common cold, or aids in its control, it would be a boon of tremendous value, and the method should be more widely utilized in practice; if, on the contrary, the vaccines which are available are not of value in any of these respects, then many members of the medical profession are being misinformed and the public is spending large sums uselessly.

The evaluation of the evidence for any prophylactic measure against the common cold is complicated by many factors which do not lend themselves readily to controlled investigation: all colds may not and probably do not have the same virus or bacterial causation; the frequency and symptomatology of colds in the community vary widely from year to year; the common cold is so mild that its victims rarely come under the direct observation of a physician during the period of invalidity; there are great differences in how people describe the severity and duration of their own colds, and consequently most reports on colds are based on unreliable subjective accounts.

Scientific evidence must exclude everything of the so-called "testimonial" type. Any one person's history of "colds" over a period of years will vary too much to allow the acceptance of such individual testimony on the results of vaccine prophylaxis. It is only through the use of a uniform type of vaccine for large numbers of persons with equally large numbers of controls over a long period of time that acceptable proof of efficacy can be obtained. These criteria applied to published reports eliminate all but a few from the necessity for serious scientific consideration.

Vaccines designed to reduce the incidence or severity of the common cold have been administered hypodermically, by the swallowing of capsules (so-called oral vaccine) and more recently by local application to the mucosa of the upper respiratory tract by means of sprays. The constituents of the vaccines used have varied widely, but most have been made up of heat or chemically killed organisms obtained originally by culture from the upper respiratory tract and combined in various proportions. The lack of agreement on the most desirable route of administration and the even greater lack of agreement on the types and proportions of organisms to include in the vaccines and on the methods of killing and preparing them are in themselves arguments against any scientific standing for this procedure. A greater measure of uniformity on these procedures would be necessary to remove a procedure of this nature from the realm of pure experiment.

ORAL VACCINES

A large number of articles in the medical literature [1] indicate the writers' belief that vaccines of various types may have some value for decreasing the incidence of colds or for reducing their severity or the incidence of complications. Most of the recent studies of a controlled nature have been with oral vaccines, of which Entoral-Lilly, Catarrhal Oravax-Merrill and the Cutter vaccines are highly publicized examples. Entoral was declared unacceptable for inclusion in New and Nonofficial Redemies in a report of the Council on Pharmacy and Chemistry published in 1937; [2] Catarrhal Oravax, while not considered in that report, was discussed in a Current Comment in THE JOURNAL [3] in which it was pointed out that the evidence for its value was equally unacceptable. Since that time Stafford,[4] the Forgraves [5] and Murat [6] have published controlled reports on oral vaccines for the common cold in which the results were believed to be predominantly favorable. Stafford's report is based on a group of 338 students, one half of whom were given an enteric coated capsule each containing 50 million killed organisms including pneumococci types I, II and III, Neisseria catarrhalis, Hemophilus influenzae, Klebsiella pneumoniae, streptococci and staphylococci, and the other half a placebo containing starch and sucrose. Comparisons of the incidence of "severe colds" was used as the index of effectiveness. Except for one week of the eight week period of observation, the incidence of "severe colds" was less among the group receiving oral vaccine than among the controls. The number of "mild colds" in the two groups did not differ materially, and the significance of the difference in severe colds was apparently not subjected to statistical analysis. The Forgraves, using the same type of oral vaccine, studied a group of 40 industrial workers divided into two groups: they record a reduction in the average number of colds between seasons of some 4.85 to 1.45 in the experimental group and from 4.2 to 3.9 in the controls. In numbers and period of observation this study appears to be deficient as a report on which adequate conclusions can be based. Murat divided 1,273 subjects into two groups, alternate individuals being given tablets containing "soluble antigenic derivative of the bacteria commonly found in the respiratory tract," while the others were given similar tablets containing an innocuous substance. This author considered that there was a difference in susceptibility to colds in favor of those taking the vaccine: there was a loss of time in 6.3 per cent of those taking the vaccine as against that of 8.6 per cent of those taking the placebo, although how this was determined was not stated.

Most of the other "controlled" studies of oral vaccination against colds either fail to demonstrate any usefulness or are distinctly inconclusive. A particularly careful investigation of oral cold vaccines was performed by Siegel and his colleagues.[7] A commercial product composed of mixed heat killed bacteria commonly found in the respiratory tract was employed. Single capsules were taken daily for the first fourteen days and twice weekly thereafter. Two hundred and fifty-three persons were involved in the study, divided into almost equal test and control groups. The number of colds in the two groups was exactly equal. The average duration of symptoms experienced by the group taking the vaccine was 10.5 days per cold, as compared with 9.7 days for the control group. The number of days of absence during the test period on account of respiratory illness varied from 0 to 43, but there was no striking difference in this respect between the test and control groups. These investigators concluded that the vaccine when given according to the manufacturer's directions did not have any influence on either the incidence or the severity of the common cold. Similarly, they could not observe any effect as a result of this treatment on the secondary complications frequently associated with the common cold. Other negative controlled studies, often involving several types of vaccination, but all of them including one or more oral vaccines, have been reported by Diehl and his colleagues [8] and by McGee and his colleagues.[9] Toomey,[10] while not presenting any studies based on controlled observations on human beings, discussed the logic on which the immunologic basis for this form of prophylaxis rests and concluded that the case for oral vaccination against colds has not yet been made.

PARENTERAL VACCINATION

Extensive attempts to employ other routes of administration have also been made. The most important of these is by hypodermic injection including intramuscular, subcutaneous and intradermal. Although it has not received much attention in this country, the report by Bashford,[11] based on observations in employees in the English Post Office System, are, because of the duration and numbers involved, particularly impressive. That study was made over a three year period by injection of a mixed bacterial vaccine. The colds in the injected and in an adequate control group were recorded. The average absence for sickness from colds among those receiving the vaccine during the first year of the experiment was less by half of one day than that of the noninoculated group. During the second

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3. Oral Vaccines in the "Cold" Season, J. A. M. A. **109**: 1130 (Oct. 2) 1937.

4. Stafford, C. I.: The Common Cold: An Evaluation of an Oral Vaccine Based on a Controlled Study, Journal-Lancet **60**: 319 (July) 1940.

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6. Murat, H. S.: Prophylaxis of the Common Cold, Indust. Med. **9**: 482 (Sept.) 1940.

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9. McGee, L. C., and others: "Cold Vaccines" and the Incidence of the Common Cold, J. A. M. A. **124**: 555 (Feb. 26) 1944.

10. Toomey, J. A.: Active and Passive Immunity: Oral Vaccination Against Colds, J. Pediat. **10**: 673 (May) 1937.

11. Bashford, H. H.: The Contribution of Industry to Medicine, Proc. Roy. Soc. Med. **31**: 185 (Jan.) 1938.

year the average absence due to such disorders among the inoculated was 0.1 day higher than that in the noninoculated group, and during the third year was 0.2 day higher than that in the controls. With a symptom complex of this type, such infinitesimal variations must obviously be considered to be without significance. Houser[12] employed a mixed bacterial vaccine by hypodermic injection in students at the University of Pennsylvania over a four year period. He concluded that the prophylactic vaccination was followed by a lessened severity and duration of the "disease" but that there was little evidence that colds were prevented by this type of therapy. At the University of Michigan, however, the Hausers[13] studied comparative groups given a vaccine or placebos subcutaneously and intradermally. The results were not conclusive and there was little definite difference between the groups. Similarly Stanley,[14] Diehl and his colleagues[15] and others[16] failed to find clearcut evidence of the value of bacterial vaccine for colds or their complications.

OTHER TYPES OF VACCINATION

The work of Besredka and those who have succeeded him has suggested that immunity to certain diseases can be built up in local tissues in excess of that circulating in the body as a whole. In pursuance of the implications of this suggestion Walsh[17] in a series of articles has presented experimental and clinical evidence on the use of a mixed bacterial vaccine applied as a spray to the nasal mucous membrane with the purpose of assisting the prophylaxis of the common cold. Walsh's observations have been on the whole encouraging to the use of this procedure, and his investigations have been more conservatively presented than those of many other proponents of new procedures. Nevertheless, Cowan and Diehl,[18] in a controlled study in human beings of this method of vaccination, have failed to obtain any evidence of its value or to confirm its clinical usefulness.

Other reports giving mainly negative results with the use of some type of vaccine have appeared (e. g. Schreuder[19]), but usually they have not been based on a large enough number of persons or observations over a long enough period of time to be considered decisive.

CONCLUSIONS

Vaccines prepared from a variety of bacteria commonly found in the respiratory tract have been prepared and combined in sundry ways and have been administered by various routes with the purpose of preventing colds, decreasing their incidence, ameliorating their symptoms, shortening their duration or decreasing their complications, or all of these combined. These objectives are all highly desirable. Unfortunately the evidence of individual case reports does not have any value in a disorder such as "the common cold," which probably covers a multiplicity of infections which are only symptomatically related. The only evidence which has scientific value is that which can be obtained by carefully controlled studies by qualified observers on large numbers of persons over a sufficiently long period of time to overcome the natural fluctuations in the major features of this symptom complex. Decisive evidence of the value of any vaccine is not forthcoming, and the weight of careful studies clearly indicates that none of the vaccines now available when administered by the routes advised have proved value. Vaccines for colds cannot be recommended for routine administration to industrial groups or to individuals. At present any attempt to prevent colds by the use of vaccines must be recognized as purely experimental and any proposal to administer such a vaccine, if given at all, should take this into consideration. As in all measures of a purely experimental nature, the uncontrolled use of any cold vaccine now available should be discouraged. Industrial physicians are under particular obligation to employ cold vaccines, if at all, only under the most rigidly controlled conditions and to report their results so that useless preparations can be promptly eliminated and further progress made.

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18. Cowan, D. W., and Diehl, H. S.: Intranasal Vaccine for the Prevention of Colds, Ann. Otol., Rhin. & Laryng. **53:** 286 (June) 1944.
19. Schreuder, O. B.: Treatment of Acute Colds with Bacteriophage Lysed Bacterial Antigen, Mil. Surgeon **78:** 211 (March) 1936.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

CONTRACEPTIVE CAPSULES AND SUPPOSITORIES (See chapter on Contraceptives, New and Nonofficial Remedies, 1944, p. 339).

Actions and Uses.—Capsules and suppositories provide a convenient method for introducing obstructive and spermicidal material into the vagina with the advantage of freedom from the need of apparatus. The solid material introduced must be converted to a jelly or liquid form in order to cover the requisite area; hence prompt liquefaction is important. For some suppositories this results from a melting point below the temperature of the body. For others the active material is enclosed in a gelatinous shell which melts or opens when exposed to body temperature and moisture. The time required should be under ten minutes, and the users should be instructed to allow this time to elapse before intercourse. A douche should not be taken within six hours after ejaculation.

To insure further protection, physicians may advise the concurrent use of an occlusive device such as a diaphragm (concerning which see general statement).

PERNOX, INC., NEW YORK

Pernox Vaginal Capsules: A soft gelatin capsule containing a low melting mass prepared from the formula:

Ricinoleic acid	0.045 Gm.
Propylene glycol monostearate	1.830 Gm.
Woolfat fraction	2.200 Gm.
Wetting agent	0.045 Gm.
Propylene glycol	0.183 Gm.
Tragacanth	0.214 Gm.

Actions and Uses.—See preceding article, Contraceptive Vaginal Capsules.

Dosage.—One capsule, containing 4.5 Gm.

PENICILLIN (See THE JOURNAL, Oct. 7, 1944, p. 367).

The following products have been accepted:

PARKE, DAVIS & CO., DETROIT

Penicillin (Sodium Salt): Vials or ampuls each containing 100,000 Oxford units.

LEDERLE LABORATORIES, INC., PEARL RIVER, N. Y.

Penicillin (Sodium Salt): Ampuls containing 100,000 Oxford units.

E. R. SQUIBB & SONS, NEW YORK

Penicillin Sodium: Packages containing 100,000 Oxford units.

CITRATED NORMAL HUMAN PLASMA (See New and Nonofficial Remedies, 1944, p. 533).

The following additional dosage form has been accepted:

HYLAND LABORATORIES, LOS ANGELES

Normal Human Plasma: 50 cc. and 500 cc. bottles. Containing an amount (preserved with phenylmercuric borate 1:25,000) to yield 50 cc. of restored plasma, packaged with a 50 cc. bottle of distilled water as a diluent (preserved with citric acid 0.1 per cent).

AMPHETAMINE SULFATE (See New and Nonofficial Remedies, 1944, p. 265).

The following additional dosage form has been accepted:

SMITH, KLINE AND FRENCH LABORATORIES, PHILADELPHIA

Benzedrine Sulfate Elixir: 177 cc. bottles. Each 3.69 cc. contains racemic amphetamine sulfate 2.5 mg. and alcohol 10 per cent.

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SATURDAY, DECEMBER 2, 1944

HERPES ZOSTER VIRUS

In 1925 Kundratitz [1] inoculated the scarified skin surfaces of 3 infants with the clear contents of herpes zoster vesicles. After eleven days 2 of the infants developed several clear vesicles with slightly reddened peripheries. In subsequent tests 4 typical cases of thoracic herpes zoster produced typical local vesiculation of the skins of several children, all of them under 5 years of age. The lesions thus produced corresponded closely with the inoculatory vesicles of chickenpox previously described by Kling.[2] In 1921 Lipschütz [3] described intranuclear acidophilic inclusion bodies in the lesions of herpes zoster apparently identical with the inclusion bodies previously described in the cutaneous lesions of chickenpox.[4]

In spite of repeated trial, herpes zoster virus has never been successfully inoculated in series into any laboratory animal. In attempts to find another feasible research technic Goodpasture and his associates [5] of Vanderbilt University grafted samples of normal human skin on the chorioallantois of chick embryos. They found that such grafts are rapidly vascularized and that they survive for at least ten days, a period sufficiently long for inoculation tests. Such grafts were susceptible to inoculation with the viruses of herpes simplex, variola and vaccinia but refractory to the virus of chickenpox.

Such grafts have now been used in a study of the causative agent of herpes zoster. To do this a Thiersch graft from the thigh of an adult surgical patient was cut into 1 cm. squares. On each square there was placed a drop of undiluted fluid from the vesicles of herpes zoster from a second individual. With the aspiration needle (size 27) multiple punctures were made through the drop into the surface of the graft. One hour later each graft was placed on the chorioallantois of a 9 day old chick embryo. All grafts adhered successfully. The grafted eggs were then incubated for periods ranging from four to eight days, at the end of which period the grafts with adherent chorioallantois were fixed in Zenker's solution.

Microscopic study showed that the grafts had developed small foci of infection by the fourth day at the sites of the multiple needle punctures, increasing by the eighth day to relatively large pustular foci. The earlier lesions consisted of small groups of hyperplastic epithelial cells whose swollen nuclei contained characteristic acidophilic inclusion bodies. In the later lesions the epithelial cells were separated from one another by inflammatory fluid and cellular exudate consisting largely of chick leukocytes. In none of the lesions had sufficient fluid accumulated to cause gross vesiculation. There was no evidence of infection of the underlying chick cells.

Experimental herpes zoster lesions in grafted human skin serve to throw light on the controversial question of the pathogenesis of the herpes zoster eruption. Many clinicians [6] have so overemphasized the presumptive role of the neurovascular mechanism as to imply an absence of the virus in the skin lesion. Goodpasture believes that the failure of the experimental lesions in his skin grafts to develop completely as vesicles merely indicates the importance of neurovascular connections for the formation of the abundant serous exudate in the human eruption. Of greater hygienic interest is his finding of the apparent nonidentity of the herpes and chickenpox viruses, which identity is suggested by a large body of clinical evidence. Whether or not the nonidentity is due to specificity differences or to differences in virulence has not yet been determined.

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2. Kling, C. A.: Berl. klin. Wchnschr. **50**: 2083, 1913.
3. Lipschütz, B.: Arch. f. Dermat. u. Syph. **136**: 428, 1921.
4. Tyzzer, E. E.: Philippine J. Sc. **1**: 349, 1906.
5. Goodpasture, E. W.; Douglas, Beverly, and Anderson, Katherine: J. Exper. Med. **68**: 891 (Dec.) 1938. Goodpasture, E. W., and Anderson, Katherine: Am. J. Path. **20**: 447 (May) 1944.
6. Baird, P. C., Jr.: New England J. Med. **228**: 568 (May 6) 1943.

DRUGS AND THE DOCTOR

Those Americans who are inclined to find fault with the development of medical affairs in this country and who seek constantly to disparage what is being done in comparison with European models will find food for thought in an editorial just published in the *British Medical Journal* [1] entitled "Drugs and the Doctor." That editorial points out that a noticeable hiatus in the White Paper, which is a plan for medicine in Great Britain, is the failure to consider the bearing of a national health service on the supply of drugs and apparatus. The *British Medical Journal* emphasizes that the use of proprietary remedies has increased since the introduction of National Health Insurance and that the effect of this has been harmful to personal and social health. After a consideration of British legislation in relation to the marketing of proprietary remedies, the editorial asserts: "No medical service is likely to be

1. Editorial, Drugs and the Doctor, Brit. M. J. **2**: 535, (Oct. 21) 1944.

a success unless it leaves the individual practitioner considerable freedom in prescribing."

Our British colleagues render a great tribute to the work of the Council on Pharmacy and Chemistry of the American Medical Association in the following paragraph taken from the editorial:

> The difficulty is that no one has a vested interest in sane pharmacotherapeutics, and therefore active steps must be taken by the profession or the community to redress the balance. The individual doctor or patient must be supplied with unbiased information. The Americans manage these things better than we do, and a recent account of the Council on Pharmacy and Chemistry of the American Medical Association deserves serious study in this country. The Council has no legal powers, but most readers will agree with the claim that no single body in modern times has brought about so much change in the practice of therapeutics. The Council derives its influence largely from the important group of medical journals published by the American Medical Association, whose pages are closed to advertisements or names of preparations which are not approved by the Council. Its success has been such that it has become a model for the Council on Physical Therapy, the Council on Foods and Nutrition, and the Council on Dental Therapeutics. It consists of 17 members, chiefly professors of medicine and pharmacology in the American medical schools, who work without remuneration but with a whole-time medical secretary. The Council does not initiate clinical trials, and as a general rule the manufacturer must submit the evidence for therapeutic or other claims, which is then reviewed by the members of the Council, together with advertising material and other pertinent data. All the Council's actions, whether of acceptance, rejection, or omission, are published in the *Journal of the American Medical Association*, and later in the book *New and Nonofficial Remedies* or in the annual reprints of the reports of the Council. The Council's work has been of immense educative value to the members of the American Medical Association, for, however keen an observer the individual clinician may be, he cannot research on all diseases all the time. It has overcome the kind of difficulty which occurs when new and potentially dangerous drugs, such as thiouracil, are introduced to the profession. We agree with a recent letter in our own columns to the effect that once these drugs are put on the market there can be no arbitrary selection of those doctors who use them. At the same time there is need for a mechanism for supplying information about them and for seeing that they are properly labelled. It is above all in the practice of correct nomenclature that the Council on Pharmacy and Chemistry has done most good, and it must be confessed that the advertising pages of medical journals and the demonstration stands at medical exhibitions in Great Britain compare unfavorably with their American counterparts.

This statement is particularly timely when some of the editors and business managers of medical periodicals in the United States have suggested that the Council on Pharmacy and Chemistry relax its standards in relation to the acceptance of claims for drugs and particularly in the matter of nomenclature. The British observe that it is above all in the practice of correct nomenclature that the Council on Pharmacy and Chemistry has done the most good, and they admit frankly that the advertising pages of medical journals and the demonstration stands at medical exhibits in Great Britain compare unfavorably with their American counterparts.

In a recent session the Board of Trustees of the American Medical Association reaffirmed its full support of the standards of the Councils on Pharmacy and Chemistry, Food and Nutrition, and Physical Medicine. In this stand the Board of Trustees and the individual Councils merit the fullest support of the American medical profession.

RATE OF FLUID ADMINISTRATION IN SHOCK

Although the loss of the cellular elements of the blood has been emphasized [1] as an important factor in shock, a disturbance of the effective relationship between blood volume and vascular space has a significant role in its causation. Restoration of fluid to the blood vessels therefore becomes an effective treatment if begun before secondary changes occur. Isotonic solutions of salts are essentially ineffective because of the rapid disappearance from the circulation. For this reason various substances with large molecular weights were used as colloidal solutions because the nondiffusible micelles exert enough osmotic pressure to retain fluid within the blood vessels.

The method of administering therapeutic agents for combating shock is emphasized in recent observations on experimental shock by Swingle and Kleinberg.[2] Wound shock involving severe muscle trauma with external and internal hemorrhage was produced in deeply anesthetized dogs. Under reproducible experimental conditions fatal shock was observed in 90 per cent of a large number of untreated animals; a drop in arterial pressure and a decrease in plasma volume characterized the syndrome. During treatment with saline solution, plasma or gelatin, single massive transfusion was compared to the same volume divided into five doses given at once and at one, two, four and seven hours after the injury. Intermittent administration of plasma was highly efficacious in preventing shock, whereas a single large infusion given within ten minutes of the injury exerted little effect in this respect. Gelatin solution given intermittently was likewise effective but to a lesser degree than plasma. Even isotonic solution of sodium chloride administered in small amounts over the extended period showed an alleviating effect, though in turn somewhat less than that of gelatin. In a single dose the salt solution was essentially ineffective.

Under the conditions of these experiments, definite improvement in the treatment of shock results when massive single transfusions of fluid are replaced by intermittent administration of the same amount. The factor of rate of fluid administration seems worthy of attention in the treatment of shock in human patients.

1. McKee, F. W.; Laycock, C. F.; Martens, T. G., and Nicholl, R. J.: Surg., Gynec. & Obst. **78**: 590 (May) 1944.
2. Swingle, W. W., and Kleinberg, William, Am. J. Physiol. **141**: 713 (July) 1944.

Current Comment

"COLD VACCINES"

In this issue of THE JOURNAL (page 895) appears a report sponsored jointly by the Council on Pharmacy and Chemistry and the Council on Industrial Health of the American Medical Association dealing with the use of so-called vaccines for the prevention of the common cold. The report points out that there is no uniformity in the types of vaccines employed, in their mode of administration or in the method of evaluating the results. None of the vaccines now available has proved value; none can be recommended for industrial groups or for individuals. In spite of the overwhelming evidence on this subject, some pharmaceutic firms continue to engage actively in the promotion and sale of various "vaccines" for the prevention of colds. This constitutes an irresponsible attitude toward the public and the medical profession, no better than most of the claims regarding the alleged benefit to colds from vitamins and proprietary nostrums. The air waves and the drug counters are crowded with so-called preventives or cures of these types, which do not serve any recognizable purpose other than to lighten the public purse.

THE GILES TWINS OF THE A. A. F.

If twin pairs entered the Army by mere chance one would expect them to appear once in 16,384 Army Register entries, whereas the actual frequency of their listing is over thirteen times as often.[1] The story of one conspicuous pair of army twins establishes again the extent to which identical twins resemble each other. These brothers carry between them five stars and demonstrate in their military history a parallelism which is most unusual. Lieutenant General Barney McK. Giles entered the Army as a private, first class, in the Signal Corps in 1917, was commissioned a second lieutenant in the following year, was honorably discharged in 1920 with the rank of first lieutenant and was reappointed to that rank a few months later. He became a major in 1939, two years later a lieutenant colonel and in the spring of 1942 was advanced to the rank of brigadier general and in the fall of that year to major general. He was promoted to lieutenant general a little later and became chief of staff of the Army Air Forces only a few months later. Major General Benjamin F. Giles entered the Army in 1917 as a second lieutenant of infantry, was honorably discharged in 1919 with the rank of first lieutenant, was recommissioned a second lieutenant in 1920 and became a major in 1930 and a temporary lieutenant colonel in 1939. In 1942 he was advanced to the rank of brigadier general and recently to that of major general. Both officers began their military careers in World War I at age 25, neither went to West Point and they entered the Army at different times but both quickly transferred to aviation and continued in that service. Both were advanced to higher rank from near the bottom of the preceding grade. This unusual military history again demonstrates that identical twins from the genetic standpoint are the same individual in two bodies.

1. J. Heredity **35**: 267 (Sept.) 1944.

MENTAL DISORDERS AND POPULATION DENSITY

At the Boston Armed Forces Induction Station a comparison was made between the rejection rates for the major mental disorders in selectees examined and the population densities of the communities from which they came.[1] Allowance was made for the socioeconomic factors and national origins, both of which influence the rate of mental disease. The highest rates of mental disorders occurred at the two extremes of population density: that for mental deficiency and psychoneurosis appeared in the semirural areas (500 per square mile) and for chronic alcoholism and psychopathic personality in a large city—Boston. Only chronic alcoholism was correlated with population density at every level. The study included communities that had the highest rates of mental disorders and those that had the lowest. Of the thirteen communities with extremely high rates, eight were in the extreme density bracket (over 20,000 people per square mile), whereas of the thirteen communities with low rates not one was in either extreme density bracket (under 500 or over 20,000 population density). Hyde and Kingsley find it not surprising that rural areas and the great city have similar rates of mental disorders, for both types of community, they say, have many unfavorable features. Only between these two extremes is there a mean that satisfies most fully the aspirations of modern life: in the community of middle size there are those advantages of interest, stimulation, excitement, of easy accessibility of recreation facilities, best opportunities for modern conveniences, without the loss of readily available rural advantages of open fields, woods and strong family life. The most adequate people, as judged by their adaptation to modern life, these writers say, migrate to the urban communities from both the rural and the dense urban areas, leaving the least able people behind. This leaves an increased proportion of inadequate people living in the undesirable extremes of density in addition to the unfavorable influences of these communities themselves. The conclusions of these Boston investigators must be accepted with reserve. The results point to the need for intensive study of communities of different population densities and characters and their influence on mental health.

1. Hyde, Robert W., and Kingsley, Lowell V.: Studies in Medical Sociology: II. The Relation of Mental Disorders to Population Density, New England J. Med. **231**: 571 (Oct. 26) 1944.

MEDICINE AND THE WAR

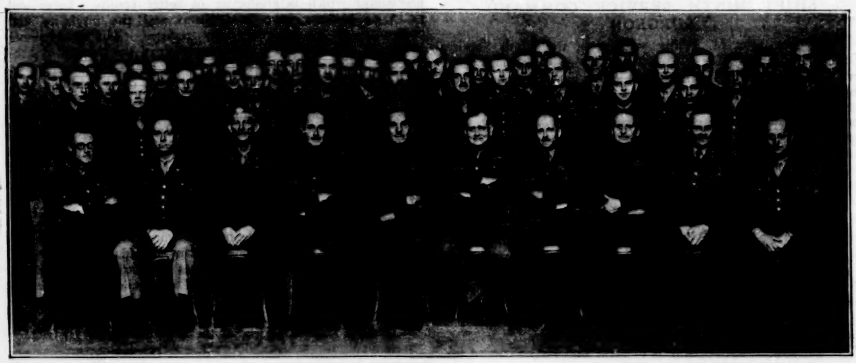
ARMY

BAL IN OIL IN TREATMENT OF SEVERE MAPHARSEN REACTIONS

War Department Technical Bulletin of Medicine 104, dated October 12, announced the availability of a new drug, bal in oil, for use in the treatment of severe mapharsen reactions. Bal in oil is packaged in sterile ampules containing 500 mg. of bal in 5 cc. (10 per cent solution) of injectable material for intramuscular use only. It is stable when stored at ordinary temperatures. The bulletin discusses the selection of cases, the recommended dosage and reactions from bal in oil.

U. S. AND BRITISH ARMY MEDICAL OFFICERS HOLD MEETING IN FRANCE

U. S. and British Army medical officers recently held a three day meeting at a large U. S. Army general hospital in France, where they exchanged ideas on the treatment of battle casualties. This was the first conference of its kind in that theater.



Medical officers who attended the three day meeting in France: Seated from left to right are Brigadier E. Bulmer, consulting physician to the British 21st Army Group; Lieut. Col. L. M. Rousselot, commanding officer, 108th U. S. Army General Hospital; Col. E. C. Cutler, chief consultant in surgery, ETO, U. S. Army; Brigadier A. E. Porritt, consulting surgeon to the British 21st Army Group; Major Gen. A. G. Biggam, consulting physician to the British army; Major Gen. Paul R. Hawley, chief surgeon, ETO, U. S. Army, who called the meeting; Major Gen. D. C. Monro, consulting surgeon to the British army; Col. J. S. K. Boyd, consulting pathologist to the British 21st Army Group; Col. J. C. Kimbrough, director of professional services, office of the chief surgeon, U. S. Army; Col. W. S. Middleton, chief consultant in medicine, ETO, U. S. Army. Standing in the second row back of Brigadier Bulmer is Brigadier Sir Stewart Duke-Elder, consulting ophthalmic surgeon to the British army. Next to him is Lieut. Col. G. Hein, senior consultant in cardiology, ETO, U. S. Army. At Colonel Hein's left is Brigadier George Riddoch, consulting neurologist to the British army. Standing at the extreme right in the second row is Lieut. Col. B. Brennan, British medical liaison officer to the office of the chief surgeon, U. S. Army.

HEAD WOUND GAS MASK DESIGNED BY CHEMICAL WARFARE SERVICE

The War Department recently announced that a gas mask to protect head wound patients from war gas has been developed by the Chemical Warfare Service and is now in production. The mask is the first such device which affords protection to patients with bandaged heads, faces or jaws and consists of a silklike vinylite plastic hood, to which an air purifying canister and an outlet valve are attached. A flexible window across the eyes provides clear vision. Air is drawn into the mask by the ordinary breathing of the wearer. It is pulled over the head like a sack, the shimmering folds of the plastic cloth giving the wearer a luminous, ghostly appearance. The skirt of the hood fastens tightly around the neck, or a gastight seal can be obtained by taping the hem to the wearer's chest.

The head wound masks are being produced by the Bennington, Vt., plant of the National Carbon Company and by the Firestone Rubber and Latex Company at Fall River, Mass. Special tape produced by the Industrial Tape Company, New Brunswick, N. J., is used in securing the canister and outlet valve to the plastic hood, since natural rubber tape would form a tacky mass when attached to the vinylite plastic.

AAF REGIONAL SURGICAL CONFERENCES

During the month of September the Air Surgeon, Major Gen. David N. W. Grant, U. S. Army, through his Professional Division, conducted six two day teaching regional surgical conferences for the medical officers of the Army Air Forces. The medical officers in the hospitals of the Army Service Forces, Army Ground Forces and the Navy adjacent to the conference hospitals were invited to attend, as well as the civilian physicians in the immediate locality of the meetings. The conferences were held at Kearns Field, Utah, Santa Ana Army Air Base, California, Aviation Cadet Center, San Antonio, Texas, Lincoln Army Air Base, Nebraska, Patterson Field, Ohio, and Drew Field, Florida.

There was a total registered attendance of 884, or an average of 147 officers per conference, representing 258 Army and Navy hospitals.

The programs at the six meetings contained 89 papers, an average of 15 per meeting, with discussions of such pertinent subjects as (*a*) the principles of wound healing, (*b*) the management of shock, (*c*) the management of chest injuries, (*d*) the management of head injuries, (*e*) the diagnosis and treatment of hernia, (*f*) chemotherapy in a surgical practice, (*g*) the use of regional anesthesia, (*h*) the treatment of pilonidal cysts and sinuses, (*i*) the treatment of more common anal and rectal conditions and (*j*) the diagnosis and treatment of varicose veins. There were many excellent presentations from physicians of the Army Service Forces, the Army Ground Forces and the Navy as well as from civilian practice. The scientific material presented in the papers and discussions is being abstracted for publication. The surgical staffs of four of the conference hos-

pitals and the Aero-Medical Laboratory of Wright Field, Ohio, presented most interesting and instructive scientific exhibits.

This is the second of a series of regional surgical conferences conducted by the Air Surgeon. The first group of twelve conferences, on Fractures and Orthopedic Surgery, was held during the fall of 1943.

COLONEL MENNINGER RECEIVES LASKER AWARD

The first annual Lasker Award in Mental Hygiene was recently presented to Col. William C. Menninger, chief consultant in neuropsychiatry, at the annual meeting of the National Committee for Mental Hygiene in New York City. The award this year was given for "outstanding contribution to the mental health of the men and women of our armed forces." The citation states that under Colonel Menninger's direction "preventive psychiatry has been enhanced by a series of lectures on personal adjustment for all officers and enlisted men" and that "through his efforts the emphasis on diagnosis and disposition has been shifted to active treatment, retraining and reconditioning for resumption of military duty or return to civilian life." The citation further states that "Colonel Menninger has taken very much to heart the difficulties that confront the soldier discharged for neuropsychiatric disability. He has taken every opportunity and means to correct the popular misunderstanding of these diagnoses."

SHIFT NINTH SERVICE COMMAND SURGEON

Brig. Gen. John M. Willis, surgeon of the Ninth Service Command since October 1943, will leave soon for an important overseas assignment, Major Gen. William E. Shedd, commanding general of the service command, announced recently. Col. Luther R. Moore, former commanding officer of the Woodrow Wilson General Hospital, Saunton, Va., has succeeded General Willis.

ARMY AWARDS AND COMMENDATIONS

Lieutenant Colonel Jesse G. Heard

The Bronze Star was recently awarded to Lieut. Col. Jesse G. Heard, formerly of Houston, Texas. The citation accompanying the award read "For meritorious achievement in connection with military operations against the enemy at Aitape, New Guinea, from July 2 to Aug. 9, 1944 Lieutenant Colonel Heard, as chief of the surgical service, evacuation hospital, efficiently organized the surgical service, overcoming many difficulties by improvising surgical appliances, selection of surgical teams, formulating policies, surgical technic and procedures. His outstanding performance as operating surgeon, superior surgical judgment and leadership contributed directly to the success of the entire medical service connected with the military operation." Dr. Heard graduated from the University of Texas Medical Branch, Galveston, in 1930 and entered the service in July 1942.

Major Champ Lyons

Major Champ Lyons, formerly of Mobile, Ala., was recently awarded the Legion of Merit. The citation read "He initiated and guided the methods by which the new and potent agent penicillin has been utilized in the treatment of the seriously wounded. From the most forward mobile hospitals of Italy to the large general hospitals of the interior he has personally operated on and studied the treatment of the wounded, instructing his seniors and subordinates alike in a change of surgical procedures which is productive of better results. Lives and limbs of soldiers have been saved and the disability and deformity of wounds materially reduced. His professional judgment, combining a basic knowledge of the science of bacteriology with skill and experience in practical surgery, has cast new light on the age old problem of wound surgery. At no time has he spared himself mentally or physically, and the example he has set is an inspiration to all surgeons in the service." Dr. Lyons graduated from Harvard Medical School, Boston, in 1931 and entered the service Aug. 11, 1943.

NAVY

NAVY ESTABLISHES FILARIASIS REGISTRY

A filariasis registry was recently established by the Bureau of Medicine and Surgery at Marine Barracks, Klamath Falls, Ore., which is the reconditioning center for Marines returned to the United States from the Pacific because of malaria or filariasis.

The purpose of the registry is to make and keep a record in a central place of all Navy and Marine Corps personnel having a diagnosis of filariasis. Establishment of this centralized record keeping system will facilitate keeping filariasis patients under surveillance as long as they are on active duty. The information obtained will also make it easier to evaluate the extent of the problem presented by the disease and make possible an adequate follow-up system for effective handling of patients. All naval stations in the United States have been directed to examine health records so that if an entry of filariasis has been made for any individual the data can be forwarded promptly to Klamath Falls.

CHANGES IN NAVY MEDICAL CORPS COMMANDS

Capt. William J. C. Agnew, Medical Corps, U. S. Navy, was recently appointed assistant chief of the Bureau of Medicine and Surgery. He will relieve Rear Admiral Luther Sheldon Jr., who has held the post since June 1940. Rear Admiral Sheldon will go to Norfolk, Va., as medical officer of the Fifth Naval District, succeeding Rear Admiral Joseph J. A. McMullin, Medical Corps, U. S. Navy. The latter has been shifted to Boston as medical officer of the First Naval District, succeeding Rear Admiral Richard H. Laning, Medical Corps, U. S. Navy. Rear Admiral Laning will assume the post of Inspector, Medical Department Activities, Pacific Ocean Areas, recently vacated by Rear Admiral William Chambers, Medical Corps, U. S. Navy, when he became medical officer in command of the National Naval Medical Center, Bethesda, Md.

Read Admiral George C. Thomas, Medical Corps, U. S. Navy, (retired), has been appointed officer in charge of the newly established Professional Division in the Bureau of Medicine and Surgery. Since July 1943 Rear Admiral Thomas has been District Medical Officer of the Eleventh Naval District.

SPECIAL COURSE IN PHYSICAL TRAINING

Further reduction of sick days of personnel in Navy hospitals is expected as a result of the graduation of the sixth class of 4 physical training officers and 67 enlisted specialist personnel from the school established recently by the Bureau of Medicine and Surgery and the Bureau of Naval Personnel at the Naval Training Center, Sampson, N. Y. Eighty-seven officers and 388 enlisted men are already on duty in Navy hospitals, carrying out a program of corrective exercises of graded intensity, designed to expedite the return to health of all types of casualties. With about 40 officers and 250 enlisted men in training at the Sampson Naval Training Center at any given time, classes of physical training personnel for assignment to Navy hospitals are graduated at weekly intervals. Personnel who majored in physical education in college in civilian life and who, in many instances, had experience in corrective exercises were selected for this new duty.

To facilitate assignment to appropriate exercise groups, medical officers classify patients according to their ability to undertake physical activity. As progress is made toward recovery, reclassification is made to the next higher group. Physical education officers and enlisted specialists are responsible for actually supervising and conducting exercises for each of the various groups of patients. As part of the Navy medical department's broad rehabilitation program, they are subject to the command of medical officers in command in the various hos-

pitals. At the present time, there are at least one physical training officer and several enlisted specialists on duty in all hospitals in full operation. The number of officers and enlisted men in a particular hospital will depend on the needs of that hospital.

NAVY MEDICAL OFFICERS ATTEND OPENING OF PENSACOLA SURVIVAL EXPOSITION

A Survival Exposition, a permanent instruction exhibit providing graphic illustrations of survival afloat and ashore, was opened recently at the Naval Air Station, Pensacola, Fla. The exhibit contains equipment developed under auspices of the Naval Medical Research Institute, National Research Council and other member agencies of the Air-Sea Rescue Agency. It will be used as regular instruction material for ground training at the station. The exhibits begin with the "ditching" of a stricken plane by the pilot and crew and carry the visitor progressively through the ordeal of being adrift on rough seas in rubber life rafts, planning salvation in polar or tropical regions and setting up temporary camp while awaiting rescue. Life size manikins demonstrate how the aviator's survival paraphernalia, together with the natural means of protection to be found in various regions, can best be used for survival. In the "Afloat" room the pilot and crew are shown adrift in rubber life rafts, employing the survival kits which are a part of the equipment of all naval aviators. Around the walls of the room are shown the individual parts of the kit. Birds, found at varying distances from shore, are flown overhead, and, in the ceiling, pinpoint lights depict the constellations of the stars that can be used as navigational fixes.

The exposition, which is in the charge of Capt. Bertram Groesbeck Jr. (MC), U.S.N., was constructed under the supervision of Lieut. Comdr. Henry Nesburn (MC), U.S.N.R., whose experiences as a Navy flight surgeon in the Pacific enabled him to include in the exhibits situations confronting aviators in the Pacific. This exhibit will be included in the ground school syllabus for flight students at Pensacola and marks a definite change in this element of ground training.

MISCELLANEOUS

HONORABLE DISCHARGE EMBLEM AUTHORIZED

A new Honorable Discharge Emblem has been adopted by the Army, Navy, Marine Corps and Coast Guard under an agreement signed by Secretary of War Henry L. Stimson and Secretary of the Navy James Forrestal. Made of cloth and of the same design as the Honorable Service Lapel Button, it will be sewed above the right breast pocket of all outer uniform clothing at the time of discharge. Honorably discharged personnel may wear their uniforms to their homes and thereafter at official ceremonies. The basic design of the emblem will be embroidered in gold, with the background material varying to match the color of the uniform on which it is to be worn. Supplies of the emblem are not yet available for distribution. Regulations pertinent to the Honorable Discharge Emblem will be published in the near future.

AID FOR BLIND VETERANS

Veterans Administration regulations issued recently, under authority of recently enacted legislation which permits seeing eye dogs to be furnished to blind veterans, stated that such veterans may be furnished the necessary travel expenses to and from their places of residence to the point where adjustment to the see-eye or guide dog is available. Meals and lodging during the period of adjustment will be provided in cases in which the veteran has to be away from his usual place of residence during the period of adjustment. In addition, mechanical and electronic equipment considered as aiding in overcoming the handicap of blindness may also be supplied, the regulations state.

MEDICAL AND SURGICAL RELIEF COMMITTEE OF AMERICA

The Medical and Surgical Relief Committee of America (420 Lexington Avenue, New York 17) is preparing several cases of medical supplies and food to be shipped to Oran, Algeria, and to southern France for the use of prisoners of war and their families. Distribution abroad will be under the supervision of the "Comité de Secours aux Prisonniers de Guerre et à leurs Familles." The shipment will include baby foods, canned apples and apricots, cod liver oil, yeast tablets, Eskay's tonic, calcium phosphate tablets, Cartose, acetylsalicylic acid, gauze, bandages, sulfonamide crystals, glycerin suppositories, milk of magnesia and Agarol.

U. S. CADET NURSE CORPS

Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, Federal Security Agency, recently announced that approximately 30,000 new student nurses have enrolled in the U. S. Cadet Nurse Corps this fall. This is in addition to the 65,521 new student nurses admitted to the nation's nursing schools during the first year of the corps, which ended June 30, 1944. The Cadet Nurse Corps recruitment quota for the twelve month period ending June 30, 1945 is 60,000 new student nurses. It is estimated that a total of 40,000 student nurses will have been enrolled between July 1, 1944 and Jan. 1, 1945, so that the opportunity still awaits 20,000 qualified young women to join the corps when spring classes start, soon after the first of the year.

RED CROSS WOMEN ON SHIPS

The first American Red Cross women assigned to Navy hospital ships will sail soon aboard the *Refuge*, marking the beginning of a new service requested by the Navy. Red Cross workers formerly had been assigned only to Army hospital ships which give medical care and treatment while transporting patients overseas. The two Red Cross hospital workers who will sail on the *Refuge* are Miss Leona McGowan of South Clinton, Iowa, in charge of Red Cross work on the ship, and Miss Katherine Bush of Santa Monica, Calif., who will assist her. Both have been serving in Red Cross domestic hospital units.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, November 18, p. 777)

FLORIDA

St. Vincent's Hospital, Jacksonville. Capacity, 300; admissions, 8,240. Sister Margaret, Superintendent (resident—urology).

MINNESOTA

St. Barnabas Hospital, Minneapolis. Capacity, 208; admissions, 6,320. Miss Nellie Gorgas, Superintendent (intern, Jan. 1, 1945).

NEW JERSEY

St. Mary's Hospital, Passaic. Capacity, 237; admissions, 5,808. Sister Martha Eucharia, R.N., Superintendent (interns).

NEW YORK

Our Lady of Victory Hospital, Lackawanna. Capacity, 185; admissions, 4,143. Sister M. Bathilde, Superintendent (2 interns).

OHIO

Lima Memorial Hospital, Lima. Capacity, 167; admissions, 4,790. Mr. Leslie O. Fonkalsrud, Administrator. (1 intern, 1 mixed residency).

St. Thomas Hospital, Akron. Capacity, 175; admissions, 5,592. Sister M. Eleanor, R.N., Superintendent (2 interns, Jan. 1, 1945).

OREGON

Emanuel Hospital, Portland. Capacity, 425; admissions, 12,034. Mr. A. L. Morland, Superintendent (1 resident—orthopedics; 1 resident—pathology; 2 mixed residencies, July 1, 1945).

WEST VIRGINIA

Charleston General Hospital, Charleston. Capacity, 380; admissions, 10,200. Dr. John E. Cannaday, Director (intern, July 1, 1945).

ORGANIZATION SECTION

Official Notes

THE PHILADELPHIA SESSION

Application Blanks Available for Space in the Scientific Exhibit

One of the features of the Philadelphia session will be the Scientific Exhibit to be held on the first floor of Convention Hall. Besides several special exhibits sponsored by the Committee on Scientific Exhibit of the Board of Trustees, there will be interesting displays presented by the medical departments of the Army, Navy and Air Corps, and many individual exhibits prepared by physicians, teachers and others.

Application blanks for space are now available and may be obtained from the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Washington Letter

(From a Special Correspondent)

Nov. 27, 1944.

President Wants Research Continued

President Roosevelt has proposed that wartime scientific research be continued into the postwar era to improve national health and better national living standards and to stimulate employment. He expressed this view in a letter to Dr. Vannevar Bush, director of the Office of Scientific Research and Development, which has coordinated the application of scientific knowledge to war problems.

"New frontiers of the mind are before us," the President said, "If they are pioneered with the same vision, boldness and drive with which we have waged this war, we can create a fuller and more fruitful employment and a fuller and more fruitful life."

Mr. Roosevelt asked Dr. Bush for recommendations on these four points: 1. What can be done, consistent with security, to give the world the scientific contributions made to the war effort? 2. With respect to combating disease, what can be done now to organize for the future the work done in medicine and related sciences? 3. What can the government do to aid public and private research? What can be done to develop scientific talent in American youth to assure progress comparable to that which has occurred during the war?

World Organization Covers Medical and Health Fields

Facilities for international medical and health programs are provided in the proposed United Nations organization planned at Dumbarton Oaks. An Economic and Social Council, to be a separate subsidiary to the main General Council, will be able to go into the field of international economic and social cooperation on a much broader basis than in the old League of Nations. The General Council would have the power to elect eighteen countries whose representatives would sit on this Economic and Social Council for three year terms. The number was limited to eighteen so as to create a workable body. On the Economic and Social Council each country would have one vote and its decisions would be made by simple majority. All the nations elected might be small nations, though that is unlikely. The Economic and Social Council would recommend courses of action to the General Assembly. Decisions of the Economic and Social Council would not become laws regulating international commerce, immigration and emigration or sanitary, labor and living conditions in any country. It could recommend courses of action to the General Assembly or provide information to the Security Council on international conditions affecting the peace of the world. Present independent social and economic agencies would take part on appropriate commissions. For instance, the United Nations Relief and Rehabilitation Administration and the International Labor organization would come under the social and humanitarian commission. For the first time it is proposed to create a body to look at the whole world, see what goes on in living conditions, labor and commerce and recommend what might be done to keep nations from causing war.

Kelley Committee Resumes Hearings

Dr. Thomas Parran, Surgeon General of the United States Public Health Service, was one of the principal witnesses called when the Kelley Committee, a subcommittee of the House Labor Committee investigating ways and means of assisting disabled persons, resumed hearings. Dr. Parran was to testify Wednesday on proposed expansion of the Public Health Service, and its organization for disabled persons.

Paul V. McNutt, Administrator of the Federal Security Agency, and Katherine F. Lenroot, Chief of the Children's Bureau, Department of Labor, described the work of their organizations. First witnesses heard were J. C. Capt, Director of the Bureau of Census, and Michael J. Shortley, Director of the Office of Vocational Rehabilitation, Federal Security Agency. To be heard are: A. F. Hinrichs, Commissioner of Labor Statistics, Department of Labor; Harry B. Mitchell, President of the Commissioners, Civil Service Commission, Oscar M. Powell, Executive Director, Social Security Board, and John W. Studebaker, Commissioner of U. S. Office of Education.

"Physical disablement caused by the war and accidents in industry assisting the war effort constitute a problem concerning the entire nation," said Representative Augustine B. Kelley, Democrat, Pennsylvania, Committee Chairman. The subcommittee, created by H. Res. 230, was appointed by Representative Mary T. Norton, Democrat, New York, Labor Committee Chairman, and includes Representatives Jennings Randolph, Democrat, West Virginia, Thomas E. Scanlon, Democrat, Pennsylvania, Richard J. Welch, Republican, California, Stephen A. Day, Republican, Illinois, and Joseph Clark Baldwin, Republican, New York, with Samuel Barker, D.C. attorney, as counsel.

Medical Phone Calls Handled

Although Thanksgiving Day telephone service in Washington and in other strike-bound areas at Detroit and Dayton, Ohio, was curtailed, emergency medical calls were given prompt attention by staffs replacing strikers. The situation, however, highlighted the seriousness from a medical standpoint of having national telephone service disrupted. Strikers called off the walkout just before the President was about to take over. Prompt attention to grievances was promised by the office of the President and the War Labor Board.

Dr. John Louis Parks Is Children's Bureau Consultant

Dr. John Louis Parks, professor of obstetrics and gynecology at George Washington University, has been appointed to serve as consultant in obstetrics to the Children's Bureau. He will advise the Children's Bureau on obstetric aspects of maternal and child health programs for which the bureau makes grants to state health agencies under the Social Security Act.

Society Proceedings

COMING MEETINGS

American Academy of Orthopaedic Surgeons, Chicago, January 21-24. Dr. Myron O. Henry, 825 Nicollet Ave., Minneapolis, Secretary.

American Society of Anesthetists, New York, Dec. 14. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

Annual Forum on Allergy, Pittsburgh, January 20-21. Dr. Jonathan Forman, 956 Bryden Road, Columbus, Ohio, Director.

Association for Research in Nervous and Mental Diseases, New York, Dec. 15-16. Dr. Thomas E. Bamford Jr., 115 E. 82d St., New York 28, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 15-17. Dr. E. Martinez-Rivera, P. O. Box 3866, Santurce, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 5-7. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ILLINOIS

Joint Medical Meeting.—A joint meeting of the Illinois Trudeau Society and the Lake County Medical Society was held at the Lake County Tuberculosis Sanatorium, Waukegan, November 14. Dr. David F. Loewen, Decatur, was chosen president-elect of the Illinois Trudeau Society and Dr. William J. Bryan, Rockford, was inducted into the presidency. Dr. Loren L. Collins, Ottawa, is secretary-treasurer. Among the speakers at the joint session were:

Dr. W. Harrison Mehn, Waukegan, Penicillin Treatment of Tuberculous Empyema—Preliminary Observations.
Dr. Werner S. Prenzlau, Waukegan. Nontuberculous Conditions Encountered in Sanatorium Outpatient Clinic.
Dr. Henry C. Sweany, Chicago, X-Ray and/or Diagnostic Clinic.
Dr. Paul G. Dick, Chicago, Chest X-Rays in Industry.

Chicago

Thomas Larsen Observes Fiftieth Anniversary at Chicago.—In November Thomas A. Larsen, in charge of the stockroom of the laboratory supply department, University of Chicago, completed fifty years of service in the department and forty-two years of taking subscriptions for THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Among the noted scientists who have subscribed to THE JOURNAL through Mr. Larsen are: Drs. Edward V. L. Brown, Paul R. Cannon, George F. Dick, Ralph C. Hamill, Basil C. H. Harvey, Ernest E. Irons, Arno B. Luckhardt, Dallas B. Phemister, Wilber E. Post and the late H. Gideon Wells, Dean D. Lewis and Howard T. Ricketts. The service of three sons of Mr. Larsen to the university brings the total of family service to ninety years, twenty for one son, Ralph, and ten each for Glen and Leonard.

Annual Clinical Conference.—The Chicago Medical Society will hold its second annual clinical conference at the Palmer House, Chicago, February 27-March 1. Among the speakers will be:

Dr. Stanley Gibson, Heart Murmurs in Children: Interpretation of Their Significance.
Dr. George M. Curtis, Columbus, Ohio, Present Status of the Therapy of Hyperthyroidism.
Dr. Wingate M. Johnson, Winston-Salem, N. C., Management of Patient with Ulcer.
Dr. Clyde L. Randall, Buffalo, Bleeding At and After the Menopause.
Dr. C. Charles Burlingame, Hartford, Conn., Present and Future Effects of the War Neuroses.
Dr. Fenn E. Poole, Burbank, Calif., Coordination of the Activities of the Plant Physician and the Private Physician.
Dr. Robert Lee Sanders, Memphis, Tenn., Pre and Post Operative Treatment.
Dr. Herman L. Kretschmer, President, American Medical Association, Medical and Surgical Diseases of the Prostate.
Col. William Paul Holbrook, M. C., Rheumatic Fever.
Dr. Eugene W. Secord, Detroit, Mistakes to be Avoided in the Application of Plaster Casts.
Dr. Irvine H. Page, Indianapolis, Hypertension.
Dr. Owen H. Wangensteen, Minneapolis, Bowel Obstruction.
Dr. Roger I. Lee, Boston, President-Elect, American Medical Association, Geriatrics.
Dr. Kendall Emerson, New York, Tuberculosis.
Wounds and Burns (speaker not announced).
Dr. Otto Saphir, Visceral Changes in Poliomyelitis.
Dr. Edward L. Cornell, Prolonged Labor.
Dr. Theodore L. Squier, Milwaukee, Hay Fever and Asthma.
Louis Schwartz, medical director, U. S. Public Health Service, Vocational Dermatoses.
Dr. Walter C. Popp, Rochester, Minn., X-Ray Therapy of Acute Infections.
Surgical Lesions of the Lungs (speaker not announced).
Dr. Philip M. Stimson, New York, Advances in the Treatment of Infectious Diseases.
Dr. Edward Tolstoi, New York, Management of the Healthy and Sick Diabetic.
Dr. Marion A. Blankenhorn, Cincinnati, Pneumonia.
Arthritis (speaker not announced).
Dr. Sidney Farber, Boston, Chronic Diarrheal Disorders in Young Children.
Dr. Peter C. Kronfeld, Chicago, Eye Conditions That Should Be Recognized by General Practitioners.
Dr. Earle B. Mahoney, Rochester, N. Y., Shock.
Dr. John W. Harris, Madison, Wis., Use and Abuse of Forceps.
Dr. John S. Lockwood, New Haven, Conn., Penicillin in Surgery.
Lieut. Col. Hardy A. Kemp, M. C., Tropical Diseases.
Dr. John C. McKinley, Minneapolis, Problem of Asocial Psychopathy in Postwar Planning.

Features will include a panel on endocrinology by Drs. Edward H. Rynearson, Rochester, Minn.; Ernest Perry McCullagh, Cleveland; Elmer L. Sevringhaus, Madison, Wis.; Henry H. Turner, Oklahoma City, and George W. Thorn, Boston, and a panel on nutrition by Drs. Morris Fishbein, Editor, THE JOURNAL, Robert Elman, St. Louis, and Paul R. Cannon, Chicago. A panel discussion on hematology is also planned, the participants to be decided later.

INDIANA

Association Approves Health Insurance Plan.—On November 12 the house of delegates of the Indiana State Medical Association, in special session in Indianapolis, adopted resolutions approving the inauguration of a prepayment health insurance plan. Details of the plan will be worked out by a specially appointed committee representative of the physicians, both as to geographic distribution and as to kinds of practice, the final plans to be approved by the house of delegates again in special session. The Indianapolis *News* stated that the plan is of an indemnity type of insurance, under which persons participating would pay their medical and surgical bills with money received from the insurance company.

LOUISIANA

Personal.—Dr. Marcelo Martinez Repetto, Merida, Mexico, is spending several months in New Orleans to study the causes and prevention of anemia, pellagra and intestinal diseases in local hospitals. This visit is part of a tour of the United States made at the invitation of the State Department.

University News.—Dr. Roy R. Kracke, dean of the new University of Alabama School of Medicine, Birmingham, addressed the recent commencement exercises of the Louisiana State University School of Medicine, New Orleans, on "The Physician's Obligation to Society." Of the 79 graduates 21 were in the Navy, 47 in the Army, and 11 were civilians, 7 of whom were women.

MASSACHUSETTS

Personal.—Dr. C. Walter Clarke, New York, executive director of the American Social Hygiene Association, was recently appointed clinical professor of public health practice at Harvard University.

Harvard Society to Resume Meetings.—The Harvard Medical Society held a meeting November 14 in the Peter Bent Brigham Hospital, Boston, the first since the beginning of the war. Meetings are planned for the second Tuesday of each month, and a program will include the presentation of a clinical case, three papers of fifteen minutes each and a five minute discussion of each paper. According to the *New England Journal of Medicine*, this plan will make it possible for clinical studies to be offered as well as results of fundamental investigation.

MICHIGAN

Memorial to Physician.—A part of the proposed new building for St. Luke's Hospital, Saginaw, will be dedicated in memory of the late Dr. Karl Kanzler as the result of a recent gift of $50,000 in memory of the physician. The donation came from the Josephine and Ernest Kanzler Fund, of which Ernest C. Kanzler, Detroit, son of the physician, is president. Dr. Kanzler died in 1920.

Women Form New Medical Branch.—On October 24 the Blackwell Society of Detroit and the Michigan branch of the American Medical Women's Association were merged, the new organization to be known as Blackwell Branch 20 of the American Medical Women's Association. Drs. Fanny H. Kenyon was named president-elect, Harriet I. E. McLane president, Rose E. Herrold vice president, Delma F. Thomas treasurer and Esther H. Dale secretary, all of Detroit.

Changes in Health Officers.—Dr. Gladys J. Kleinschmidt has been named health officer of Isabella County.——Dr. Alexander Witkow has resigned as health officer of Menominee County.——Dr. Homer G. Slade on October 25 became director of district health unit number 4, including the counties of Alpena, Presque Isle, Montmorency and Cheboygan. He will have headquarters in Rogers City.——Dr. Georgia V. Mills has resigned as deputy health officer in Saginaw.

Chairman Named to Start Fund Raising Campaign.—Wendell W. Anderson, president of the Medical Science Center of Wayne University, Detroit, has been named chairman of the first cycle of the medical center's fund raising campaign. Four buildings to be constructed in the first cycle program, the goal of which is about $10,000,000, are the halls of the medical sciences to house the Wayne University College of Medicine, the college of pharmacy, the school of mortuary science, and allied programs; a university hospital for teaching and research; a classroom, administration and dormitory build-

ing for the recently authorized college of nursing, and a powerhouse, laundry and service building. The eventual goal of the Medical Science Center campaign is $50,000,000, of which approximately $20,000,000 will be for construction and equipment of buildings and $30,000,000 for the endowment of program and research. The city plan commission has approved a fifty-three acre, fifteen block site for the Medical Science Center, situated east of the Art Center. The corporation counsel has begun the condemnation of the first three blocks of this site.

MINNESOTA

Illegal Practitioner.—On October 17 Elmer C. Hultgren, Minneapolis, was sentenced to a term of one year in the Minneapolis Workhouse following his plea of guilty to an information charging him with the crime of practicing healing without a basic science certificate. He was arrested September 16 following his attempt to perform an abortion on an unmarried woman at his apartment, for which he received the sum of $20. Hultgren admitted that he had no medical education of any kind, stating that three or four years ago he attempted to perform an abortion on another woman and that these 2 cases were the only ones in which he was ever involved.

Personal.—Dr. James M. Hayes, formerly of Minneapolis, has been appointed assistant professor of surgery at the College of Medical Evangelists, Los Angeles.——Dr. Audley V. Fankboner, who has had charge of the Range Hospital, Buhl, for the past eight years, has been named head of the medical department of the Walter Butler Shipbuilding Company with offices at the Riverside yard, effective September 15.——On October 4 the Minnesota Public Health Association gave a dinner in honor of Dr. Edward A. Meyerding, St. Paul, in recognition of his twenty years of service with the association, of which he is executive secretary. Dr. Meyerding, who has been executive secretary since 1924, previously served as director of the division of hygiene of the St. Paul department of education.

MISSOURI

Elmer Bartelsmeyer Dies.—Mr. Elmer H. Bartelsmeyer, executive secretary of the Missouri State Medical Association from 1933 to 1942, when he became consultant, died in St. Louis November 18, aged 54.

Alpha Omega Alpha Lecture.—On November 10 Dr. Joseph Earle Moore, associate professor of medicine, Johns Hopkins University School of Medicine, Baltimore, gave the annual Alpha Omega Alpha Lecture at Washington University School of Medicine, St. Louis. His subject was "Chemotherapy of Syphilis."

Dr. O'Reilly Honored.—Dr. James Archer O'Reilly, professor and head of the department of orthopedic surgery, St. Louis University School of Medicine, and president of the St. Louis and Missouri societies of crippled children, was given a citation and medal for distinguished service to crippled children throughout the country during the twenty-second annual meeting of the National Society for Crippled Children at the Edgewater Beach Hotel, Chicago, in October. Dr. O'Reilly has been a member of the board of trustees of the national society since 1930 and has served as secretary and chairman of the Section on Orthopedic Surgery of the American Medical Association.

Postwar Plans for St. Louis University.—A $500,000 addition to the present building of the St. Louis University School of Medicine is planned in the $2,600,000 postwar expansion program, according to Rev. Patrick J. Holloran, S.J., president of the university, in a statement to the press November 4. Plans have been completed and work will be started on the medical school immediately on release of permission by the war production board. Of brick and stone, the new construction will be four stories in height and will contain a library and an amphitheater which will seat the entire student body. The proposed building program includes an addition to the nurses' home, a new library, a new class room building and a new dormitory. Twin science buildings will be erected at a cost of $250,000 each, one to house the physics and geophysics departments and the other the chemistry and biology classes.

NEW JERSEY

Physician Resigns as Dean of New Medical School.—Dr. Arcangelo Liva, Hackensack, announces that he has resigned the deanship of the Essex College of Medicine and Surgery, Newark, which was scheduled to open November 4 (THE JOURNAL, September 9, p. 115, and November 4, p. 647).

NEW YORK

Child Guidance Center.—The Westchester County Children's Association announces the opening of the Guidance Center, a service for children and young people of Westchester County. Two of the services offered by the center, group demonstrations and the consulting service, have been available for some time, but the recent addition of a fee service includes adjustment of emotional, educational and behavior problems and vocational counseling and testing. The Westchester County Children's Association is located at 8 Church Street, White Plains.

Graduate Lectures.—Dr. Philip M. Stimson, associate professor of clinical pediatrics, Cornell University Medical College, will give a graduate lecture on poliomyelitis before the Suffolk County Medical Society, Smithtown, December 6. Dr. William F. Lipp, Buffalo, gave a graduate discussion on the "Treatment of Jaundice" before the Steuben County Medical Society, Bath, November 9. Dr. Harry M. Rose, New York, will address the Saranac Lake Medical Society, December 20, in the Saranac Laboratory on "The Diagnosis and Treatment of Meningitis." These lectures are sponsored cooperatively by the state medical society and the state department of health.

New York City

Personal.—Philip S. Platt, Ph.D., who recently completed a current study of voluntary health agencies under the sponsorship of the National Health Council and for many years director of the Palama Settlement in Honolulu, T. H., has been appointed executive director of the National Association for the Blind.

County Medical Societies Consider Mayor's Health Plan.—On November 17 the conference committee of the Health Insurance Plan of Greater New York met at the New York Academy of Medicine with presidents and other representatives of the county medical societies in the metropolitan area to explore the possibilities of their cooperation in developing the comprehensive medical service plan originally announced by Mayor Fiorello La Guardia early this year (THE JOURNAL, May 13, page 161). The conference stated that there had been an encouraging exchange of views and a second meeting was to be held December 1 at the academy of medicine.

NORTH CAROLINA

Seaboard Medical Association.—The forty-ninth annual meeting of the Seaboard Medical Association of Virginia and North Carolina will be held at the Cherry Hotel, Wilson, December 5-7, under the presidency of Dr. Malory A. Pittman, Wilson. Among the speakers will be:

Dr. Paul F. Whitaker, Kinston, Medical Care of the Future.
Dr. Rufus E. Raiford, Franklin, Va., Intravenous Anesthesia.
Dr. James Graham Ramsay, Washington, Torsion of Omentum.
Dr. Antonio A. Burke, Norfolk, Va., Glaucoma with Especial Relation to Early Treatment.
Dr. Cleon W. Goodwin, Wilson, Enterogenous Cyst.
Dr. Charles Lydon Harrell, Norfolk, Remarks on the Early Approach to the Care of the Tuberculosis Patient.
Dr. Claiborne T. Smith, Rocky Mount, Chronic Noncalculus Cholecystitis.
Dr. Southgate Leigh Jr., Norfolk, Treatment of Crushing Injuries of the Extremities.
Dr. Clayton W. Eley, Norfolk, Treatment of Sinusitis in Children by X-Ray.
Dr. Samuel A. Thompson, New York, Comparison and Value of Various Resuscitation Methods.
Dr. William C. Hunter, Wilson, Endemic Typhus Fever.
Dr. Randolph Bryan Grinnan Jr., Norfolk, Coronary Occlusion.
Dr. Clarence P. Jones Jr., Newport News, Va., Observations in Clinical Use of Prostigmin.
Dr. Russell von L. Buxton, Newport News, Treatment of Tetanus.
Dr. Albert G. Hahn, Hickory, Infantile Paralysis.

A symposium on Rocky Mountain Spotted fever will be presented Wednesday afternoon by Drs. Coy C. Carpenter, Robert P. Morehead, Robert B. Lawson and George T. Harrell Jr., all of Winston-Salem.

OKLAHOMA

Surgery Course Postponed.—The ten weeks course of postgraduate medical study in surgical diagnosis, which was to have opened in Tulsa, October 13, has been indefinitely postponed pending the employment of an instructor, according to the *Bulletin* of the Tulsa County Medical Society. Dr. Archibald G. Fletcher, Philadelphia, who had been employed to present the course in the state during 1944 and 1945, has resigned (THE JOURNAL, Dec. 18, 1943, p. 1059). The course was to be offered under the auspices of the Oklahoma State Medical Association, with financial assistance from the Commonwealth Fund of New York and the state department of health.

PENNSYLVANIA

Personal.—Dr. Horace C. Scott, Philadelphia, has been appointed deputy secretary of health of Pennsylvania in charge of Negro public health activities.——Dr. J. Newton Hunsberger, Norristown, recently won the Challenge Trophy offered by the Professional Horsemen Association. The 78 year old physician rode to first place astride his 18 year old hunter, Highboy.

Philadelphia

Public Health Society Organized.—The Public Health Society of the University of Pennsylvania was recently organized and held its inaugural dinner, November 8, at the Warwick Hotel, Philadelphia. Dr. Angelo M. Perri is president of the society, and Dr. Mildred C. J. Pfeiffer, 331 S. Smedley Street, Philadelphia 3, is secretary. Dr. Perri was toastmaster at the dinner, and Lieut. Col. Arthur P. Hitchens, M. C., was guest of honor. Other speakers included Drs. Stuart Mudd, professor of bacteriology, and Charles C. Wolferth, professor of clinical medicine, at the school and Dr. Rufus S. Reeves, director of health of Philadelphia, Dr. Hubley R. Owen, director of medical services, board of education of Philadelphia, and Dr. Claude P. Brown, assistant director, state department of health laboratories. The society plans to hold bimonthly scientific sessions. Membership is not restricted to graduates of the University of Pennsylvania alone but is open to doctors of medicine, veterinary medicine and dentistry, social workers, sanitary engineers, public health nurses, political scientists and any one interested in the broad field of public health and preventive medicine.

TENNESSEE

Postgraduate Study.—Dr. Joseph R. Bromwell Branch will conduct a postgraduate course in gynecology in western Tennessee the week of January 15, according to the state medical journal. He recently concluded the 1944 circuit of lectures and returned to the Novak Clinic, Baltimore. The state journal reports that the total number of registrants for these courses during the two years the state association has sponsored them is 1,391, including 991 civilian physicians and 400 medical officers of the Army, Navy and Marine Corps.

Faculty Changes.—Dr. Herbert S. Wells, Winston-Salem, N. C., is acting professor of physiology at the University of Tennessee College of Medicine, Memphis. Dr. Lathan A. Crandall Jr., professor of physiology, is head of the department. Forrest R. Davison, Ph.D., Kalamazoo, Mich., has been named assistant professor of pharmacology to succeed Dr. Lloyd D. Seager, who has become head of the department of pharmacology at Woman's Medical College of Pennsylvania, Philadelphia. Other changes in the faculty at Tennessee include the resignation of Dr. Howard Curl as assistant professor of anatomy to become assistant professor of radiology at the school.

WASHINGTON

New Executive Secretary.—Mr. Ralph W. Neill, for nine years correspondent for the Associated Press Bureau at Olympia, has been chosen executive secretary of the Washintgon State Medical Association, succeeding the late Arthur Anderson.

Director Named for State Division of Mental Hygiene.—Dr. George C. Stevens, who has been in charge of the development and operation of the mental hygiene program in Indiana for the past six years, has been appointed in charge of the newly established Washington division of mental hygiene. The creation of the new unit has been approved by the Washington State Medical Association, and a medical committee has been appointed to assist in developing a program which is a part of the general health plan of the state. The division will work closely with interested groups having responsibility for rehabilitating the returned veteran. A full time mental hygiene clinic is already in operation in room 320, Smith Tower, Seattle, and offers service to returned servicemen who have neuropsychiatric problems and to parents and others in child guidance who cannot afford other assistance. According to *Northwest Medicine*, as additional personnel become available it is planned to establish a second full time clinic in Spokane County, with a third clinic unit being made available on a traveling basis to all parts of the state as need arises. The psychiatric clinic service will necessarily be limited to those persons who would be unable to provide private care.

Proposed State Medical-Dental School.—In a discussion of the proposed state medical-dental school in connection with the University of Washington, Seattle, *Northwest Medicine* states that a recent survey disclosed that about 360 Washington residents are continually seeking medical education in other states and that about 116 residents must obtain their dental degrees elsewhere. This circumstance would not be so alarming, it was stated, were it not for the fact that a high percentage of these persons, including many of those graduating in the higher brackets, fail to return to their home state to enter practice because of the opportunities offered elsewhere. It was pointed out that a medical-dental school in the state would be a magnet for prospective medical and dental students, not only of Washington but also of Alaska, British Columbia, Idaho and Montana. Replacements in the state have been "few and far between" in recent years. A recent survey disclosed that currently there is an average of only 1 physician to 1,765 persons in the state, compared with 1 physician to only 964 persons in prewar days. The journal points out that while legislation is required to establish the school, the state medical and dental associations are planning to conduct a campaign for donations, contributions and endowments.

WISCONSIN

Ira Baldwin Named Dean of Graduate School at Wisconsin.—Ira L. Baldwin, Ph.D., professor and head of the department of bacteriology, University of Wisconsin, Madison, has been appointed dean of the graduate school. Dr. Baldwin, who during the past year has been doing war work in Washington under a leave of absence, will devote full time to his university work after December.

GENERAL

Pediatric Board Increases Fees.—At the recent annual meeting of the American Board of Pediatrics, it was decided to increase the application fee to $75, effective May 1, 1945.

Meeting of Anesthetists.—The annual meeting of the American Society of Anesthetists will be held at the New York Academy of Medicine, December 14, under the presidency of Dr. Emery A. Rovenstine, New York. Among the speakers will be:

Dr. Ralph M. Waters, Madison, Wis., subject not announced.
Dr. Albert D. Foster, New York, Peripheral Circulatory Responses During Anesthesia, Hemorrhage and Shock; the Use of the Digital Plethysmograph as a Clinical Guide.
Dr. Solomon G. Hershey, New York, Effects of Anesthesia on the Circulatory Response to Blood Loss.

Sessions on Industrial Health.—The four national associations of professional workers in industrial health will meet at the Drake Hotel, Chicago, during the week of April 23. The National Conference of Governmental Industrial Hygienists will hold its meetings on April 23-24, the American Association of Industrial Hygienists will meet on April 25-26, and the American Association of Industrial Physicians and Surgeons' meetings are scheduled for April 25-27, the last day's sessions to be held jointly with the American Industrial Nurses Association, which will continue its sessions on April 27-28.

Special Society Elections.—Dr. Archibald D. Campbell, Montreal, Que., was named president-elect of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at its annual meeting recently and Dr. Lewis F. Smead, Toledo, Ohio, was inducted into the presidency. Dr. James R. Bloss, 418 11th Street, Huntington 1, W. Va., was reelected secretary. The next annual session will be held at Hot Springs, Va., September 6-8.——Dr. Frank R. Bradley, medical superintendent of Barnes Hospital, St. Louis, was named president-elect of the American College of Hospital Administrators; Dr. Claude W. Munger, medical director, St. Luke's Hospital, New York, was installed as president.

Jackson Memorial Lecture.—The first Jackson Memorial Lecture, named in honor of the late Dr. Edward Jackson, Denver, was given by Dr. William H. Crisp, Denver, during the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 11. The lecture is sponsored by the *American Journal of Ophthalmology* as a tribute to Dr. Jackson, who was for many years editor of the journal. Dr. Crisp's title was "Edward Jackson's Place in the History of Refraction." Dr. Crisp had been associated with Dr. Jackson on the editorial board of the *American Journal of Ophthalmology* and still holds a directorship in the publishing company and serves as an associate editor. Dr. Jackson was elected president of the academy in 1906 and was the first to hold the office under the present name of the organization.

Child Welfare Information Service.—The Child Welfare Information Service, Inc., was recently organized with headquarters in Washington, D. C. According to the *State Charities Aid Association News* the service is designed as a national clearing house of information on federal legislation and the activities of federal agencies concerning welfare of infants, children and youths. The scope of the service includes social security, recreation, child labor and related activities. Mrs.

Eugene Meyer, Washington, co-publisher of the Washington *Post*, is president. Other officers include Dorothy Canfield Fisher, Ph.D., Arlington, Vt., vice president; Mrs. Gertrude Folks Zimand, New York, secretary, and George J. Hecht, New York, treasurer. Bernard Locker, New York, assistant executive secretary of the State Charities Aid Association's welfare legislation bureau, has been named executive director of the new group, effective November 1.

Borden Award for Nutritional Research. — The first annual Borden Award for nutritional research, given through the American Academy of Pediatrics, was presented at the wartime conference on child health in St. Louis, November 10, to Major Harry H. Gordon, M. C., and Dr. Sam Z. Levine, assistant professor (on leave) and professor of pediatrics, Cornell University Medical College, New York, respectively. The award consists of a bronze medal with the inscription "award for outstanding achievement in research in nutrition of infants and children" and a prize of $1,000. Major Gordon and Dr. Levine received the award for their work on "Metabolic Studies on Nutritional Requirements of Premature and Full Term Infants," the formal paper being presented by Major Gordon at the meeting of the academy, November 11. Major Gordon has been stationed at Harmon General Hospital, Longview, Texas, since December 1942 and is currently chief of the malaria section.

Society News.—The seventeenth annual convention of the Aero Medical Association of the United States will be held at the Palmer House, Chicago, September 24-26. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, is the secretary. ——The Society of American Bacteriologists will hold its 1945 session at the Book-Cadillac Hotel, Detroit, May 22-25. Leland W. Parr, Ph.D., George Washington University School of Medicine, Washington, D. C., is the secretary of the association. The association announces that Eli Lilly and Company is again offering a $1,000 prize and bronze medal to a young man or woman working in a research or educational institution who is deemed to have done the most outstanding work in the field of bacteriology and immunology. To be eligible for the award, a nominee shall not have passed his thirty-fifth birthday on April 30 of the year of the award. All nominations must have been received on or before February 15 for the 1945 award, the first announcement of the award to be made at the annual meeting of the Society of American Bacteriologists.

Medical Correctional Association.—Dr. Robert V. Seliger, Baltimore, was chosen president of the Medical Correctional Association at its annual meeting in the Hotel Pennsylvania, New York, October 12. Other officers include Dr. Robert H. Felix, Washington, D. C., and Robert M. Lindner, Ph.D., Lewisburg, Pa., vice presidents, and Mr. Edwin J. Lucas, New York, secretary-treasurer. The program of the meeting included discussion of "Treatment in the Postwar Prison—From the Point of View of the Psychiatrist," Dr. Marion R. King; of the psychologist, Benjamin Frank, supervisor of education, Bureau of Prisons, Department of Justice; of the physician, Dr. John W. Cronin, all of Washington. In addition the following spoke:

Mr. Lukas, Alcohol and Crime.
Dr. Lawrence F. Woolley, Towson, Md., Integration of Psychiatric Service with Court Procedures.
Dr. Seliger, What the Psychiatrist Wants from the Social Worker.
Dr. Lindner, Hypnoanalysis in the Treatment of Psychopathic Characters.
Dr. John D. Reichard, Lexington, Ky., Tension: Its Study and Possible Role in Neurotic and Antisocial Behavior.

The Medical Correctional Association is an affiliate of the American Prison Association, and the recent meeting was a part of the annual corrections' congress held in New York October 12-15. Dr. Edwin J. Lukas is the secretary of the Medical Correctional Association which may be addressed at the Society for the Prevention of Crime, 122 East Twenty-Second Street, New York 10. Membership at $1 a year is open to all interested persons.

Sectional Meeting of Federation for Clinical Research. —The eastern section of the American Federation for Clinical Research will hold a meeting December 9 at the Massachusetts General Hospital, Boston. Included among the speakers will be:

Dr. Sidney Scherlis, Staunton, Va., Clinical and Stethographic Observation on Sounds Associated with Auricular Activity.
Drs. Gordon B. Myers and Benjamin G. Oren, Detroit, Use of the Augmented Unipolar Left Leg Lead in the Differentiation of the Normal from Abnormal Q Wave in Standard Lead III.
Dr. C. Cabell Bailey and Rachel S. Leech, B. S., Boston, Observations on Alloxan Diabetes, with Special Reference to Blood Alloxan Determinations.
Drs. Edward C. Reifenstein Jr., Laurance W. Kinsell and Saul Hertz, Boston, Effect of Testosterone Compounds upon the Nitrogen Balance and Creatine Excretion in Patients with Thyrotoxicosis.
Dr. Elmer C. Bartels, Boston, Preoperative Use of Thiouracil in the Management of Severely Toxic Hyperthyroidism.
Drs. Rudhard S. Gubner and Murrill M. Szucs, New York, Comparative Study of Various Therapeutic Measures in 150 Cases of Rheumatic Fever.
Drs. Thiesen A. Ray and John S. LaDue, New Orleans, Intravenous Administration of Lanctoside C to Patients Taking Maintenance Doses of Folio Digitalis Up to the Date of Hospitalization with Recurrent Congestive Heart Failure.
Drs. Thomas M. Durant, Joan H. Long and Morton J. Oppenheimer, Philadelphia, Air Embolism: An Experiment Study of the Cardiac Manifestations.
Dr. Charles S. Davidson, Dr. John H. Freed and Francis H. L. Taylor, Ph.D., Boston, Methods of Estimating and Meeting Protein Requirements in Disease.
Drs. John T. Quinby and John H. Talbot, Boston, Blood Gas Values in Polycythemic States.
Dr. Joseph F. Ross, Boston, Hemoglobin Metabolism Studies with Radio-Active Iron in Normal Persons and Anemic Patients.
Dr. William B. Scoville, Framingham, Mass., Recent Developments in the Diagnosis and Treatment of the Cervical Ruptured Intervertebral Disc.
Drs. Henry J. Tagnon, William Goodpastor and S. N. Levinson, Boston, A Clinico-Pathological Correlation of the Kidney in Patients with Thermal Burns.
Dr. William G. Leaman Jr., Philadelphia, Prolonged Use of Mercupurin in Congestive Cardiac Failure.

FOREIGN

Campaign Against Leprosy. — A grant approximating a million dollars has been allocated by the British government for a five year campaign against leprosy in Nigeria. The New York *Times* stated that this is the British taxpayers' latest contribution under the colonial development and welfare act passed in 1940. A high proportion of the people of the British empire live in the tropics, where leprosy is most prevalent, the *Times* stated in reporting an announcement from the British Information Service. In 1924 the British Empire Leprosy Relief Association was established to work with all existing antileprosy agencies. By 1944 they had twenty-nine clinics in operation and 12,000 persons with leprosy were receiving treatment. In addition, fourteen model leper villages had been built.

Government Services

Robert Felix Placed in Charge of Mental Hygiene Division

Dr. Robert H. Felix has been appointed medical director in charge of the mental hygiene division in the bureau of medical services, U. S. Public Health Service. He succeeds Dr. Lawrence Kolb, who retired October 31. Dr. Felix, who was born in Kansas in 1904, graduated at the University of Colorado School of Medicine, Denver, in 1930. He was commissioned in the regular corps of the public health service in August 1933 and assigned to the medical center of the bureau of federal prisons at Springfield, Mo. In 1936 he left his position in Springfield as clinical director and went to the public health service hospital, Lexington, Ky., where he served as clinical director and later as executive officer for the medical and psychiatric rehabilitation of narcotic drug addicts. In 1942 he was sent to the U. S. Coast Guard Academy, at New London, Conn., where he developed and operated a mental hygiene service for coast guard cadets and applied psychologic and psychiatric tests in the selection of officer material.

Walter Treadway Retires from Public Health Service

Walter Lewis Treadway, medical director, U. S. Public Health Service, concluded more than thirty-two years in the public health service November 1, when he retired from active duty for disability incurred in service. Dr. Treadway had been stationed in Los Angeles since July 1941 as medical officer in charge of public health service activities. He graduated at the Barnes Medical College, St. Louis, in 1907 and joined the public health service on July 28, 1913. He subsequently held many important assignments concerned with the mental hygiene activities of the public health service and from 1930 through 1938 was assistant surgeon general in charge of a newly created division of mental hygiene in the service. In 1938 he was detailed as medical officer in charge of the public health service hospital in Lexington, Ky., and in the following year was assigned to the University of California Medical School, San Francisco, to collaborate with the California Department of Institutions and the university in the establishment of a department of psychiatry in the medical school and the creation of the Langley Porter Clinic. He remained in San Francisco until his assignment to Los Angeles in 1941.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Oct. 22, 1944.

Institutional Care of Young Children

Proposals to support a scientific inquiry into the effects on young children of being brought up in institutions are announced by the Nuffield Provincial Hospitals Trust. This inquiry is of particular importance at the present time, when so many children are being brought up in this way. Some sort of provision will have to be made in the future, as in the past, for the care of homeless, abandoned and handicapped children. But, although the impression exists that children brought up in institutions compare unfavorably in their adaptation to life with children brought up in normal homes, there is no scientific evidence on which a national policy can be based. The Nuffield Trust authorities are therefore making a substantial grant to the Provisional National Council for Mental Health to enable that body to undertake a carefully planned inquiry.

The widespread benefactions of the automobile magnate Lord Nuffield have been reported in previous letters to THE JOURNAL. Other recent grants made by the Nuffield Provincial Hospitals Trust are for the support of cancer research at Sheffield and to the department of child life and health in the University of Edinburgh for special study of problems of nutrition and dietetics in infancy and childhood.

Alterations Proposed for Royal Society of Medicine Building

The Royal Society of Medicine, the principal British medical society, is appealing to its fellows for $250,000 to enlarge its premises. The number of fellows is now three times what it was in 1910, when the house at 1 Wimpole Street, London W. 1, was built, and the society's work is likely to expand. The proposed alterations include (1) a new top floor to contain a large room fully equipped for the clinical examinations, (2) an additional spacious library on the second floor approximately equal in accommodation to the present library on the first floor, (3) a third meeting room on the third floor, which can be used for discussions after clinical meetings, and (4) improved common room and committee room accommodations. The appeal is made with confidence that the Royal Society of Medicine has a brilliant future in accordance with its past traditions, if the alterations can be made without being hampered by a building debt.

Return of University Students to London

The bombing of London led to the transfer of its educational establishments to safer places. Now with a great decline in the attacks the colleges are returning. The University of London is faced with the problem of finding accommodations for its students. About a third of College Hall, the only London University hall of residence for women, which closed at the beginning of the war, has been reopened for students. A third has been requisitioned by the government for the American Red Cross, and the other third was demolished in an early blitz. It can now take only 80 instead of the normal 170 residents. University College has taken over five bombed houses, but their repair is held up by shortage of labor.

Radiolocation for the Blind

In the London laboratory of Capt. H. G. Round, acoustics consultant of St. Dunstan's Institute for the war blinded, a radiolocation box has been invented by which a blind man will be able to recognize obstacles in his path. It consists of two pieces of electrical sound and light apparatus weighing about 10 pounds and set on wooden boards. To it is connected a pair of ear phones. The first experiments in using the apparatus have shown it to be a success. The blind man can range-find with it; if the apparatus is set for 8 feet, it makes a buzzing noise when any object is that distance away. It is hoped to develop a model weighing only 1 pound, which could be carried in the pocket. Experiments are also being made to produce a switchboard which can be operated by a man who has lost his hands.

BRAZIL

(From Our Regular Correspondent)

RIO DE JANEIRO, Sept. 25, 1944.

Dr. George Pack in Rio de Janeiro

Dr. George T. Pack, from the Memorial Hospital of New York City, spent a few days in Rio de Janeiro as a special representative of the American College of Surgeons. Before several young doctors and medical students he operated on cancer patients at the Moncorvo Filho Hospital, one of the newest municipal institutions, which is under the direction of Dr. Helson Cavalcante. Dr. Pack read papers on the treatment of cancer of the stomach and rectum and melanotic carcinoma at the National Academy of Medicine, at the Moncorvo Filho Hospital and at the Brazilian College of Surgeons, where he was received as a corresponding member. Dr. Pack was invited to a luncheon at the Gavea Golf and Country Club, where Dr. A. de Oliveira Lima, secretary general of health for the Federal District (city of Rio de Janeiro), presented him, in the name of Mayor Henrique Dodsworth, the welcome of the capital city of Brazil. Before leaving, Dr. Pack received from the Brazilian government the insigne of the highest honor of the order of the Cruzeiro do Sul (the Southern Cross).

Medical Films

The Bureau of Health Information of the Rio de Janeiro City Health Department, under the direction of Dr. J. F. Fontenelle, in cooperation with the Division of Motion Pictures of the Office of the Coordinator of Inter-American Affairs, a few weeks ago began the weekly presentation of technical films to the physicians of the city. Several films passed by the Board of Censors of the American College of Surgeons or prepared by the United States Public Health Service have already been shown, among which were those on modern local treatment of burns, the treatment of varicose veins, injuries to the face, surgical treatment of glaucoma, the fight against malaria, the modern diagnosis of tuberculosis and the treatment of syphilis.

Marriages

DOMINICK F. CHIRICO, Brooklyn, to Miss Mary Grace Babcock of Duluth, Minn., in Little Rock, Ark., November 18.

THEODORE W. NEUMANN, Central Valley, N. Y., to Mrs. Grace Middleton Hanson of New Rochelle, October 14.

EDGAR WINSLOW LANE JR., Bloomsbury, N. J., to Miss Jane Gardner Garrou in Valdese, N. C., September 27.

JOHN GIRDWOOD THOM, Los Angeles, to Miss Louise Theresa Newcomb of West Pittston, Pa., September 23.

HOWARD BUCHANAN SMITH JR., Mullins, S. C., to Miss Katherine Rhadert of Charleston, September 15.

MORTON G. MARKS, Lincoln, Neb., to Miss Dorothy M. Kayser of Atlantic City, N. J., October 22.

CHARLES ROBERT TABORSKY to Miss Nancy Margaret Nesbit, both of Madison, Wis., October 5.

BERT JOHN VOS JR. to Miss Elizabeth Aughey, both of Washington, D. C., October 1.

THOMAS CARROLL TYRRELL, Muncie, Ind., to Miss Sallie Jane Major of Mishawaka recently.

STILWELL G. MEANY, East Troy, Wis., to Mrs. Luella Jordan in Baraboo, September 2.

Deaths

Philip Foster Barbour ✠ Louisville, Ky.; Hospital College of Medicine, Louisville, 1890; professor emeritus of pediatrics at the University of Louisville School of Medicine, where he had been clinical professor of diseases of children and head of the department of pediatrics from 1908 to 1940; professor of chemistry from 1895 to 1898, and professor of diseases of children from 1898 to 1907 at the Hospital College of Medicine; professor of pediatrics at the Louisville and Hospital Medical College, 1907-1908; specialist certified by the American Board of Pediatrics, Inc.; member and state chairman of the American Academy of Pediatrics; member of the Association of American Teachers of Diseases of Children and the Southern Medical Association; in 1925 vice chairman of the Section on Pediatrics of the American Medical Association and in 1936 member of the House of Delegates; fellow of the American College of Physicians; president of the Kentucky State Medical Association in 1932; past president of the Kentucky Alumni Association of Delta Kappa Epsilon and the Conference of Social Workers; served as president of the Kentucky State Pediatric Society and the Louisville Society for Mental Hygiene; medical chairman of the Kentucky White House Conference; consultant pediatrician, Kentucky State Department of Health and Kentucky State Baptist Orphan Asylum; consultant pediatrician and formerly chief of staff, the Children's Free Hospital; formerly visiting pediatrician, Louisville City Hospital, and pediatric consultant on the staff of the Kosair Crippled Children Hospital; trustee, Centre College; member of the Rotary Club; died in St. Anthony's Hospital November 1, aged 77, of coronary thrombosis.

Lindsay Stephen Milne ✠ Kansas City, Mo.; University of Edinburgh Faculty of Medicine, Scotland, 1904; fellow of the Royal College of Physicians of Scotland; fellow of the American College of Physicians, the New York Academy of Medicine and the Kansas City Academy of Medicine; member of the American Association of Pathologists and Bacteriologists and the Pathological Society of Great Britain and Ireland; one of the founders, and president, in 1941, Kansas City Southwest Clinical Society; served as member of the council of the Jackson County Medical Society; formerly professor of medicine at the University of Kansas School of Medicine, Kansas City, Kan.; specialist certified by the American Board of Internal Medicine; lieutenant colonel in the medical corps of the U. S. Army from 1917 to 1919, serving with the American Expeditionary Forces overseas as commanding officer of Base Hospital number 28; pathologist at the Russell Sage Institute of Pathology in New York from 1908 to 1912; member of the staff and served as chairman of the executive committee of the General Hospital; member and past president of the staff of the Research Hospital; on the staffs of the Menorah and St. Luke's hospitals; died September 17, aged 61.

Oscar Monroe Gilbert ✠ Boulder, Colo.; Barnes Medical College, St. Louis, 1898; member of the House of Delegates of the American Medical Association, 1928 and 1929; fellow of the American College of Physicians; past president of the Colorado State Medical Society; honorary life member and formerly director of the Colorado Tuberculosis Society; member of the Denver Clinical and Pathological Society and the National Tuberculosis Society; professor of medicine emeritus at the University of Colorado School of Medicine, where he had formerly been professor of anatomy, assistant professor of medicine, professor of clinical medicine, associate professor of medicine and professor of medicine; instructor of anatomy at his alma mater, 1898-1899; contract surgeon with the rank of captain during World War I; on the staffs of the Community Hospital and Mesa Vista Sanatorium; died October 18, aged 71, of heart disease.

William Stimpson Hubbard, Philadelphia; Long Island College Hospital, Brooklyn, 1894; member of the Medical Society of the State of New York; fellow of the American College of Physicians; past president of the Long Island Medical Society; associate secretary in 1901 and secretary in 1902, Medical Society of the County of Kings; at one time instructor in physical diagnosis at the Long Island College Hospital, where he had been chief of the orthopedic clinic and consulting physician; for many years practiced medicine in Brooklyn, where he had been on the staffs of the House of St. Giles the Cripple, St. John's and Kings County hospitals; at one time president of the chamber of commerce of Brooklyn; died September 1, aged 78, of complications resulting from a cerebral hemorrhage.

James Higgins McIntosh, Columbia, S. C.; College of Physicians and Surgeons, New York, 1888; member and past president of the South Carolina Medical Association; had served as president of the Columbia Medical Society, Seventh and Second district medical societies of South Carolina, the Tri-State Medical Association of Virginia and the Carolinas and the Association of Surgeons of the Atlantic Coast Line Railway; member of the draft board during World War I; for many years local surgeon for the Seaboard Air Line Railroad and the Southern Railway; at one time state referee, Mutual Life Insurance Company of New York; on the staff of the Columbia Hospital; died September 2, aged 77, of cerebral hemorrhage.

David Max Henning, Memphis, Tenn.; Memphis Hospital Medical College, 1900; Columbia University College of Physicians and Surgeons, New York, 1902; member of the Tennessee State Medical Association; at one time lecturer on rectal diseases and assistant demonstrator of surgery on the cadaver, Memphis Hospital Medical College; served overseas during World War I; on the staffs of the Methodist and St. Joseph hospitals and the Hospital for Crippled Adults; formerly on the staff of the Memphis General Hospital, now known as the John Gaston Hospital; died September 7, aged 68, of heart disease.

Charles B. Wilkerson, Raleigh, N. C.; University of North Carolina School of Medicine, 1906; member of the Medical Society of the State of North Carolina; past president of the Wake County Medical Society and of the Raleigh Academy of Medicine; formerly Wake County physician; served as local surgeon for the Seaboard Air Line Railway and for the Durham and Southern Railway; formerly president of the Peoples Bank of Apex; on the staffs of the Rex and St. Agnes' hospitals; died September 20, aged 65, of carcinoma of the pancreas.

James R. Adam, Mount Clemens, Mich.; Detroit College of Medicine, 1896; died September 27, aged 75.

Charles William Bell, Farmington, Maine; Medical School of Maine, Portland, 1897; member of the Maine Medical Association; fellow of the American College of Surgeons; for many years medical examiner for Franklin County; on the examining board during World War I; consulting surgeon emeritus on the staff of the Franklin County Memorial Hospital; died October 13, aged 71, of coronary thrombosis.

Henry Walter Birdsong, Athens, Ga.; Atlanta College of Physicians and Surgeons, 1911; member of the Medical Association of Georgia and the Southeastern Surgical Congress; formerly a member of the state board of medical examiners; on the staffs of St. Mary's and Athens General hospitals; past president of the Lions Club; died October 10, aged 61, of heart disease.

Laurence H. Coffey, Waxhaw, N. C.; Medical College of Virginia, Richmond, 1906; an examiner for the board of Caldwell County during World War I; practiced in Lenoir, where he had been first county physician and quarantine officer; served on the staffs of the Long Hospital, Statesville, and Hickory Hospital, Hickory, died in the Gordon Crowell Memorial Hospital, Lincolnton, September 3, aged 68, of cerebral hemorrhage.

Francis James Coughlin ✠ Aurora, Ill.; Northwestern University Medical School, Chicago, 1901; served as health officer of Aurora; died in St. Mary's Hospital, Rochester, Minn., September 22, aged 68.

Charles Hicks Crain, Evanston, Ill.; Illinois Medical College, Chicago, 1900; member of the Illinois State Medical Society; died in the Presbyterian Home September 29, aged 89, of chronic pyelonephritis and cystitis.

Richard Smith Crichlow ✠ New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1917; in charge of the outpatient dispensary of the Veterans Bureau for twelve years; junior ophthalmologist on the staff of the Touro Infirmary; on the staff of the Eye, Ear, Nose and Throat Hospital; examiner for the Selective Service Board number 16; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; died in the Southern Baptist Hospital September 6, aged 62, of congestive heart failure and hypertension.

Ernest Michael Dorsett, Philadelphia; Medico-Chirurgical College of Philadelphia, 1904; died September 18, aged 68, of coronary thrombosis.

Thomas Andrew Grace, Excelsior Springs, Mo.; Medico-Chirurgical College of Kansas City, 1903; served during World War I; died in the Veterans Administration Facility, Wadsworth, Kan., September 14, aged 73.

Rollin S. Fillmore, Long Beach, Calif.; Missouri Medical College, St. Louis, 1883; practiced medicine in Blue Rapids, Kan., for forty-six years; died November 2, aged 89, of heart disease.

Thomas H. Gafney, Chicago; College of Physicians and Surgeons, Chicago, 1891; died in the Englewood Hospital October 21, aged 76, of uremia and prostatic hypertrophy.

Irwin B. Gilbert, Philadelphia; Hahnemann Medical College and Hospital, Philadelphia, 1882; died in the Hahnemann Hospital September 7, aged 89.

Thomas A. Griffin, Washington, D. C.; Columbian University Medical Department, Washington, 1894; retired chief of the application division, Civil Service Commission; died October 12, aged 79, of cerebral hemorrhage.

James Caleb Gruber ✠ Lisbon, Ohio; Illinois Medical College, Chicago, 1905; on the staff of the Salem City Hospital, Salem; died September 8, aged 71, of cerebral hemorrhage.

Caroline Frances Hamilton, White Plains, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1888; for many years a medical missionary in Turkey; died in the White Plains Hospital September 11, aged 83.

Vernard Reno Hodges, Indianapolis; Rush Medical College, Chicago, 1904; served during World War I; formerly on the staff of the Methodist Hospital; died September 14, aged 61, of coronary occlusion.

Bernard Hohenberg, New York; University of the South Medical Department, Sewanee, Tenn., 1900; on the staff of St. Mark's Hospital; died September 6, aged 72, of coronary thrombosis.

John M. Hooten, Woodbury, Ga.; Atlanta Medical College, 1885; died September 12, aged 83.

Chester Clifford Houck, Dormont, Pa.; University of Pittsburgh School of Medicine, 1922; served an internship at St. Francis Hospital in Pittsburgh; died September 19, aged 46, of heart disease.

Jesse Whipps Hull, Toledo, Ohio; Cincinnati College of Medicine and Surgery, 1897; served on the staff of the Toledo Hospital; died in the Masonic Home, Springfield, September 19, aged 81, of arteriosclerosis.

Norman Reek Ingraham, Philadelphia; Jefferson Medical College of Philadelphia, 1902; assistant professor of dermatology and syphilology at the University of Pennsylvania School of Medicine; for many years a member of the medical department of the Pennsylvania railroad; died in the Pennsylvania Hospital September 20, aged 64, of hypertensive cardiovascular disease.

Dwight David Johnson, Grass Valley, Calif.; University of the City of New York Medical Department, 1883; member of the California Medical Association; died October 30, aged 83.

Carl Power Jones ✠ Grass Valley, Calif.; Cooper Medical College, San Francisco, 1907; a lieutenant commander in the U. S. Navy during World War I; served as health officer of Nevada County; physician and owner of the W. C. Jones Memorial Hospital; died October 18, aged 66, of coronary occlusion.

Thomas Monroe Jones ✠ Anderson, Ind.; Johns Hopkins University School of Medicine, Baltimore, 1902; a major in the medical corps of the U. S. Army during World War I; served as president of the school board of Anderson; on the staff of St. John's Hospital; director of the Anderson Banking Company; died September 19, aged 67, of rheumatic heart disease.

Lee Kahn, Louisville, Ky.; Louisville Medical College, 1903; honorary member of the Jefferson County Medical Society; member of the Kentucky State Medical Association; fellow of the American College of Surgeons; a captain in the medical corps of the U. S. Army during World War I; attending surgeon, Jewish, Louisville City and Children's Free hospitals and the Masonic Widows' and Orphans Home and Infirmary; associate surgeon, Kosair Crippled Children Hospital; died September 14, aged 66, of coronary occlusion.

Clarence King, Franklinville, N. Y.; University of Buffalo School of Medicine, 1885; died in Machias September 3, aged 83, of carcinoma of the stomach.

Philip Albert Kimball, Northampton, Mass.; Boston University School of Medicine, 1918; member of the New Hampshire Medical Society; on the staff of the Northampton State Hospital, where he died September 2, aged 55.

William A. Kyger, Free Union, Va.; University College of Medicine, Richmond, 1901; died September 8, aged 69, of heart disease.

Arnaud Julian La Pierre, Norwich, Conn.; University of Vermont College of Medicine, Burlington, 1910; member of the Connecticut State Medical Society; died July 12, aged 59.

William Manners Lawhon, Chicago; Barnes Medical College, St. Louis, 1898; died September 12, aged 78, of cerebral hemorrhage and pneumonia.

Samuel Louis Leffel, Orangeburg, N. Y.; Long Island College of Medicine, Brooklyn, 1931; served an internship at the Bushwick Hospital, Brooklyn; formerly an intern and resident in psychiatry at St. Lawrence State Hospital, Ogdensburg; on the staff of the Rockland State Hospital, where he died September 9, aged 49, of carcinoma.

Francis Alexander Leslie, Toledo, Ohio; Bellevue Hospital Medical College, New York, 1894; served on the staffs of Toledo, St. Vincent's and Robinwood hospitals; chief of staff and on the advisory council of the Toledo District Nurses' Association; died September 6, aged 80, of heart disease.

Clarence J. Lewis, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1891; served in France as a medical officer with the 28th Division during World War I; chairman of the local draft board number 64; major, medical reserve corps, U. S. Army, not on active duty; on the staffs of the Hahnemann and Frankford hospitals; died September 2, aged 76, of hepatitis.

Minor Carson Lile ✠ Seattle; University of Virginia Department of Medicine, Charlottesville, 1914; fellow of the American College of Surgeons; served overseas during World War I; on the staffs of the Virginia Mason Hospital and the Children's Orthopedic Hospital; died September 3, aged 55, of coronary thrombosis.

Elmer William Litle ✠ Los Angeles; Grand Rapids (Mich.) Medical College, 1901; on the staffs of the Presbyterian, St. Joseph and French hospitals; died September 8, aged 74, of heart disease.

Ludwig Mannheimer Loeb ✠ Chicago; Rush Medical College, Chicago, 1900; formerly assistant professor of medicine at his alma mater; for many years on the staff of the Cook County Hospital; since 1906 medical examiner for various insurance companies; died November 6, aged 66.

Carl Lovelace ✠ Waco, Texas; Columbian University Medical Department, Washington, D. C., 1902; veteran of the Spanish American War and World War I; chairman of the board of directors of the Waco Public Library; served as president of the Texas Club of Internal Medicine; medical director of the Amicable Life Insurance Company; on the staffs of the Hillcrest Memorial and Providence hospitals; died September 14, aged 68, of tuberculosis.

Archibald Alexander McFadyen, Morganton, N. C.; North Carolina Medical College, Davidson, 1903; for many years a medical missionary in China, where he had been in charge of the Men's Hospital in Hsuchowfu; member of the staff of the State Hospital; died September 23, aged 67, of coronary thrombosis.

Ralph Lyman McGeoch, Goshen, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1894; member of the Medical Society of the State of New York; town health officer for forty years; died September 1, aged 76, of cerebral edema, myocarditis and arteriosclerosis.

James R. McHugh, Ortonville, Minn.; Curtis Physio-Medicine Institute, Indianapolis, 1893; died July 21, aged 85, of chronic cystitis and uremia due to benign hypertrophy of prostate.

J. M. McIntosh, Bristol, Tenn. (licensed in Tennessee in 1896); died August 12, aged 75.

Robert Sprague McKee, Connellsville, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1896; member of the Medical Society of the State of Pennsylvania; for many years affiliated with Company D of the Pennsylvania National Guard; served on the Mexican border and later in France during World War I; member of the Fayette County local draft board number 1; formerly member of the school board; on the staff of the Connellsville State Hospital, where he died September 2, aged 70.

James Shelby McKown, Osceola, Texas; Vanderbilt University School of Medicine, Nashville, 1886; member of the State Medical Association of Texas; died in the Boyd Sanitarium, Hillsboro, September 13, aged 82, of pneumonia.

Simon M. Mollinger ✠ Milwaukee; Northwestern University Medical School, Chicago, 1904; member and past president of the staff of the Misericordia Hospital, where he died September 9, aged 62, of uremia, acute nephritis and acute hemorrhagic pancreatitis.

Earl Harrell Moody, Bluff City, Tenn.; University of Tennessee College of Medicine, Memphis, 1926; on the staff of the King's Mountain Memorial Hospital, Bristol, Va.; died September 18, aged 46, of bacterial endocarditis.

William Howe Morrison, New York; College of Physicians and Surgeons, New York, 1892; member of the Medical Society of the State of New York; died in the Roosevelt Hospital August 26, aged 75, of arteriosclerotic heart disease and right hemiplegia.

Francis Rudolph von Nahowski ✠ Chicago; Northwestern University Medical School, Chicago, 1921; fellow of the American College of Surgeons; specialist certified by the American Board of Surgery; served an internship at the Mercy Hospital; on the staff of the Ravenswood Hospital; died in a hospital at Portage, Wis., September 15, aged 50, of coronary thrombosis and duodenal hemorrhage.

Edgar Shane Newlin, North Adams, Mich.; Miami Medical College, Cincinnati, 1891; died September 5, aged 76, of chronic myocarditis.

Cornelius James Noonan ✠ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1900; on the staff of St. Peter's Hospital, where he died September 10, aged 67, of pernicious anemia.

American College of Surgeons; on the courtesy staff of the Brooklyn Hospital; director of surgery and attending surgeon at St. Mary's Hospital, where he died September 26, aged 65, of leukemia and uremia.

Harry Hapeman Patrie ✠ Brooklyn; University of Pennsylvania School of Medicine, Philadelphia, 1916; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staffs of the Brooklyn Eye and Ear Hospital and the Brooklyn Hospital, where he died September 12, aged 53, of coronary occlusion.

Ward Elverton Potter, St. Petersburg, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the Illinois State Medical Society; formerly a practitioner in Oak Park, Ill., where he was affiliated with the West Suburban Hospital; served in the medical corps of the U. S. Army during World War I; died in Asheville, N. C., September 14, aged 68, of tuberculous meningitis and pulmonary tuberculosis.

Boyd Cornick Rembe, Chicago; Chicago Medical School, 1920; died in the Mother Cabrini Hospital September 28, aged 54, of coronary embolism.

CAPT. FRANK M. KING
M. R. C., U. S. A., 1911-1944

LIEUT. HUBERT H. WASHBURN
M. R. C., U. S. A., 1917-1943

CAPT. THEODORE PARKS ROBIE
M. C., A. U. S., 1917-1944

Rance O'Neal, West Point, Ga.; Atlanta College of Physicians and Surgeons, 1901; member of the Medical Association of Georgia; on the staff of the Valley Hospital; member of the Lions Club; died September 11, aged 69, of carcinoma of the stomach.

William Vincent Pascual ✠ Brooklyn; Columbia University College of Physicians, New York, 1900; fellow of the

William P. Shackleford Jr., Hollandale, Miss.; University of Louisville Medical Department, 1908; died in the King's Daughters' Hospital, Greenville, September 8, aged 58, of heart disease.

Clayton Whittemore Shaw, Alexander, Ky.; Medical College of Ohio, Cincinnati, 1894; member of the Kentucky State Medical Association; past president of the Campbell-Kenton

KILLED IN ACTION

Frank Malcolm King, Ramona, Okla.; St. Louis University School of Medicine, 1937; member of the Oklahoma State Medical Association; served an internship and residency at the State University and Crippled Children's Hospitals, Oklahoma City; in 1940 named director of the health unit at Woodward, Okla.; commissioned a first lieutenant in the medical reserve corps of the U. S. Army on June 1, 1937; began active duty on Aug. 21, 1942; departed for foreign service in February 1943; promoted to captain Oct. 24, 1943; after active duty in the Tunisian campaign went to Italy, serving in a battalion aid station; killed in action in Italy January 10, aged 32.

Hubert Horace Washburn, Beaver, Pa.; Jefferson Medical College of Philadelphia, 1941; served an internship at the Philadelphia General Hospital; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on Aug. 1, 1942; attached to the 504th Parachute Infantry Regiment; reported missing July 11, 1943, after his airplane crashed en route from Tunisia to Sicily; declared dead Nov. 11, 1943, aged 25.

Theodore Parks Robie, New York; Harvard Medical School, Boston, 1942; diplomate of the National Board of Medical Examiners; served an internship at the Massachusetts General Hospital in Boston; commissioned a first lieutenant in the medical corps, Army of the United States, on July 10, 1942; began extended active duty on Aug. 13, 1943; later promoted to captain; killed in action in France September 19, aged 27.

Counties Medical Society; served as councilor of the Eighth District of the Kentucky State Medical Association; for many years county health officer; served during World War I; on the staff and trustee of Speer's Memorial Hospital, Dayton, where he died September 11, aged 73, of cerebral hemorrhage.

David Kalbach Shivelhood ✠ Petersburg, Va.; Jefferson Medical College of Philadelphia, 1933; member of the Medical Society of the State of New York; on the staff of the Petersburg Hospital; formerly on the staff of the New York Post-Graduate Medical School and Hospital in New York; specialist certified by the American Board of Radiology; died September 11, aged 37, of melanosarcoma.

Harry James Stewart, San Diego, Calif.; Northwestern University Medical School, Chicago, 1893; member of the California Medical Association; died October 31, aged 76, of heart disease.

Carl Philip Struve ✠ South Elgin, Ill.; Northwestern University Medical School, Chicago, 1904; past president of the Kane County Medical Society; on the staffs of St. Joseph Hospital and the Sherman Hospital, Elgin, where he died September 19, aged 66, of cerebral hemorrhage.

Loamma Edgar Turney, Brownstown, Ill.; Physio-Medical College of Indiana, Indianapolis, 1899; served on the staff of the Mark Greer Hospital, Vandalia; died August 18, aged 74, of hemiplegia and diabetes mellitus.

Arthur Allen Wall, Rankin, Pa.; Leonard Medical School, Raleigh, N. C., 1909; died September 3, aged 62, of lobar pneumonia.

Charles R. Wallace, Struthers, Ohio; Cleveland Medical College, Homeopathic, 1897; member of the Ohio State Medical Association; had been a member of the village council, board of education and board of health; died September 30, aged 77, of cerebral hemorrhage.

John Thomas Walsh, New York; Bellevue Hospital Medical College, New York, 1898; assistant registrar, bureau of records, city board of health, for many years; died October 17, aged 70, of heart disease.

Nathan Alonzo Warren ✠ Yonkers, N. Y.; Bellevue Hospital Medical College, New York, 1879; an Affiliate Fellow of the American Medical Association; served as mayor, postmaster, president and honorary director of the chamber of commerce, president of the U. S. Pension Board in Yonkers and member of the city civil service commission; formerly on the staffs of St. John's, Riverside, St. Joseph's, Yonkers General and Yonkers Professional hospitals; died in Oak Bluffs, Mass., August 14, aged 88, of coronary heart disease.

Charles F. Weir ✠ Chicago; Northwestern University Medical School, Chicago, 1894; formerly instructor in anatomy and instructor in clinical gynecology at his alma mater; for many years a member, past president of the staff and, at the time of his death, a member of the board of trustees of Englewood Hospital; died September 27, aged 74, of coronary thrombosis.

Virgil H. Wells, Napoleon, Mich; Saginaw Valley Medical College, Saginaw, 1897; served as health officer; died August 8, aged 75, of arteriosclerosis.

Earl E. Wilcox, Chicago; the Hahnemann Medical College and Hospital, Chicago, 1908; member of the Illinois State Medical Society; served during World War I; on the staff of the Jackson Park Hospital, where he died September 16, aged 58, of coronary occlusion.

David Edgar A. P. Williams, Union, Mo.; Barnes Medical College, St. Louis, 1904; died August 11, aged 79, of heart disease.

Samuel E. Williams, Manlius, Ill.; College of Physicians and Surgeons of Chicago, 1893; died in the Julia Rackley Perry Memorial Hospital, Princeton, August 28, aged 78, of carcinoma of the sigmoid.

William Robert Williams ✠ Riverside, Ill.; Chicago College of Medicine and Surgery, 1916; formerly on the associate staff of the Cook County Hospital, Chicago; member of the staff of the North Riverside Branch of the City of Chicago Municipal Tuberculosis Sanitarium; cardiologist and member of the executive staff, West Suburban Hospital, Oak Park, where he died September 27, aged 59, of intestinal obstruction and peritonitis.

Chester Pearce Woodward, Baltimore; Maryland Medical College, Baltimore, 1911; died September 1, aged 64, of chronic myocardial degeneration.

Gaylord Worstell ✠ Big Sandy, Mont.; Columbian University Medical Department, Washington, D. C., 1899; died in Fort Benton August 11, aged 81, of carcinoma of the prostate.

DIED IN MILITARY SERVICE

Oliver Austin, Trenton, N. J.; Northwestern University Medical School, Chicago, 1941; an intern at the Cook County Hospital, Chicago, where he also served a residency in surgery; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, on Sept. 23, 1943; died in an airplane accident July 5, aged 32.

Brown Hutcheson Carpenter ✠ Danville, Va.; University of Tennessee College of Medicine, Memphis, 1934; served an internship and a residency in surgery at the Nashville General Hospital, Nashville, Tenn.; commissioned a captain in the medical corps, Army of the United States, on Aug. 13, 1942; later promoted to major; killed in an airplane crash in Morris County, N. J., October 5, aged 33.

Monroe Bertram Gall, New York; Université de Strasbourg Faculté de Médecine, France, 1938; internship at Hôpitaux Civiles, Strasbourg, Alsace, 1936-1938; served a residency in psychiatry at the U. S. Public Health Service Hospital in Lexington, Ky.; diplomate of the National Board of Medical Examiners; formerly associated with the Civilian Conservation Corps in Vienna, Md., Westover, Md., and Towson, Md.; commissioned a first lieutenant in the medical reserve corps of the U. S. Army on March 1, 1939; began active duty on Dec. 5, 1940; later promoted to captain and major; died in Toem, Dutch New Guinea, August 5, aged 32.

William John Hawes, Columbia, Mo.; John A. Creighton Medical College, Omaha, 1913; member of the Missouri State Medical Association; served overseas during World War I; at one time city physician in Kansas City; formerly served with the Civilian Conservation Corps; commissioned a captain in the medical reserve corps of the U. S. Army on Jan. 22, 1925; later promoted to major; began active duty on July 10, 1941; died in the European theater of operation July 10, aged 55, of coronary occlusion.

Eugene Milton Holleb, Brooklyn; New York University College of Medicine, New York, 1936; member of the Medical Society of the State of New York; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Radiology, Inc.; served an internship at the Queens General Hospital in Jamaica; formerly resident physician at the Bellevue, New York City Cancer Institute Hospital and Mount Sinai Hospital all in New York; commissioned a first lieutenant in the medical reserve corps of the U. S. Army on April 4, 1940; began active duty on April 1, 1941; later promoted to captain and major; died in Port Moresby, New Guinea, October 14, aged 32, of injuries received in a motor vehicle accident.

Raphael Christopher McDonough, Spokane, Wash.; University of Oregon Medical School, Portland, 1930; member of the Washington State Medical Association and the American Academy of Dermatology and Syphilology; served an internship at the Seattle City Hospital and the Firland Sanatorium, Richmond Highlands; formerly resident in dermatology at the Barnard Free Skin and Cancer Hospital in St. Louis; commissioned a captain in the medical corps, Army of the United States, on June 6, 1942; began active duty on Aug. 10, 1942; died in the AAF Regional Station Hospital, Santa Ana, Calif., September 6, aged 39, following a cholecystectomy.

Daniel Paul McEndy, Halesite, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1940; diplomate of the National Board of Medical Examiners; served an internship and residency in pathology at the New York Hospital, New York; commissioned a captain in the medical corps, Army of the United States, on May 1, 1942; died in Washington, D. C., August 19, aged 30.

Arie C. Rempe, Pella, Iowa; Rush Medical College, Chicago, 1937; member of the State Medical Society of Wisconsin; commissioned a lieutenant in the medical corps, U. S. Naval Reserve, on June 17, 1942; died in the U. S. Naval Hospital, Oakland, Calif., June 28, aged 39, of coronary thrombosis.

Charles Albert Rethers, San Francisco; Creighton University School of Medicine, Omaha, 1933; member of the California Medical Association; served internships at the Southern Pacific General and St. Mary's hospitals; commissioned a lieutenant in the medical corps of the U. S. Naval Reserve in May 1942; died in Tia Juana, Mexico, May 26, 1943, aged 39, of multiple injuries.

Correspondence

BACTERIOPHAGE ELECTRON MICROGRAPHS

To the Editor:—The editorial "Bacteriophage Electron Micrographs" in THE JOURNAL, November 4, corroborates certain observations about the relative size of coli and staphylococci bacteriophages made in England and America approximately a dozen years ago.

In Britain, Elford and Andrewes (The Sizes of Different Bacteriophages, *Brit. J. Exper. Path.* **13**:446 [Oct.] 1932), employing graded collodion membranes (gradocol) and checking by diffusion through Jena sintered glass disks, concluded that coli phage particles had a diameter of about 30 millimicrons, while Staphylococcus phage particles ranged between 50 and 75 millimicrons.

In this country, by far cruder methods, I observed that certain races of bacteriophage were able to pass through types of filters which others could not (Goldsmith, N. R.: Variations in the Filtrability of Different Races of Bacteriophage, *J. Bact.* **33**:495 [May] 1937):

> Of four races of bacteriophage lytic for Escherichia coli, Streptococcus hemolyticus, Streptococcus fecalis, and many staphylococci, all of which passed Chamberland candles of various porosities, only the first two were also able to pass through the Coors—a much finer filter. . . . The variations in filtrability were not altered by the age of the filtrates, by storage temperatures, by contacts with the homologous cultures or by mixtures with definitely filtrable races of phage. Although not proved by the filtration experiments, it is suggested that the observed variations in filtrability are due to differences in the size of bacteriophage races.

Luria, Delbruck and Anderson, referred to in your editorial (*Proc. Nat. Acad. Sc.* **28**:127, 1942; *J. Bact.* **46**:57, 1943), note that one staphylococcus phage was found to be about twice the size of a coli phage in all dimensions, or eight times its volume.

At the time of my observation it was felt that variations in size were responsible for the differences in filtrability, although it was recognized of course that there are many factors determining filtrability. Luria's findings indicate that perhaps my original conception may be near the truth.

NORMAN R. GOLDSMITH, M.D., New York.

THE MALE CLIMACTERIC—A MISNOMER

To the Editor:—Among the numerous male patients complaining of various functional nervous disorders, including sexual impotence, Heller and Myers (THE JOURNAL, October 21, p. 472) found 23 who had pronounced elevation in gonadotropic hormone excretion, comparable quantitatively to that occurring in castrates. Testicular biopsy done on 8 of these patients revealed reduction in size and in activity of the seminiferous tubules and reduction in size and number of Leydig cells. Three times hyalinization of the seminiferous tubules was found. The age of those patients varied from 25 years to the seventh decade. They made a striking improvement after parenteral administration of testosterone propionate. They are considered to be "true examples of the male climacteric." Heller and Myers emphasize that their findings are by no means a physiologic accompaniment of the aging process in the male. "It is a relatively rare syndrome, probably affecting only a small proportion of men who live into old age."

Further investigation and corroboration seem to be necessary with regard to the following statements of Heller and Myers:

1. The large number of clinical symptoms listed in their table 2 is encountered in both groups of patients, those with and those without evidence of testicular failure. Testosterone propionate injected or implanted is effective only in the first and not in the latter group of patients. It is surprising that in the latter group diagnosed as psychoneurosis not one patient should have responded to this treatment. Any kind of treatment should have had at least a psychologic effect in one or another of those psychoneurotic persons.

2. According to Heller and Myers there is a sharp line of separation between the "male climacterics" and the psychoneurotic; there is no room for transitional or mixed cases. This is surprising since in female climacterics such a mixture and amalgamation of hypo-ovarian and psychoneurotic symptoms is the rule rather than the exception.

3. Why has oral or sublingual administration of methyl testosterone been quite ineffective?

4. Hot flushes are characteristic of the female climacteric. I never encountered them as a spontaneous complaint in men. Are they not the result of suggestive questions asked by the physician?

5. Treatment with injections of testosterone resulted not only in alleviation of the symptoms but also in a pronounced drop of the elevated level of the excreted gonadotropic hormone. If Heller and Myers believe that the elevation of gonadotropins in testicular insufficiency is due to failure of utilization of this hormone by the testes, how do they explain the effect of parenteral testosterone administration on the amount of gonadotropin in the urine?

On the grounds that the syndrome reported by Heller and Myers occurs as a rare and pathologic accompaniment of the aging process and that among 23 patients it was observed three times in men under the age of 30, I should prefer calling the syndrome "testicular insufficiency" rather than "male climacteric." I see no reason to change my standpoint expressed in the monograph "Constitution and Disease: Applied Constitutional Pathology" (New York, Grune & Stratton, 1942, p. 83): "If the term climacteric is used, as it should be, to designate the cessation of the gonadal activity at a definite period of life, with all the consequences brought about by such an elimination of the gonads from the endocrine system, then there is little justification for using the term male climacteric. The functional activity of the testicles slackens with advance in years. There is, however, neither generally nor individually a definite age at which the testicles stop functioning as do the ovaries. Flushes, vasomotor crises and sudden attacks of perspiration characterize the menopause; these do not occur, however, in males. The rise in concentration of gonadotropic pituitary hormone in the urine of women at the menopause is not to be observed in men with advance in years. There is not sufficient foundation for calling the whole gamut of neurasthenic complaints occurring in men between 45 and 60 climacteric, just because a mental depression may be associated with sexual impotence."

JULIUS BAUER, M.D., Los Angeles.
Clinical Professor of Medicine, College of Medical Evangelists.

ACUTE INFECTIOUS LYMPHOCYTOSIS

To the Editor:—In THE JOURNAL, June 3, you published the very interesting article of Dr. Carl H. Smith "Acute Infectious Lymphocytosis." May I inform you that apparently the same illness with most of its peculiarities were described in my paper "Febris lymphocytotica," *Ann. pædiat.* **152**:117 (Nov.) 1938.

S. ROSENBAUM, M.D., Tel-Aviv, Palestine.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Chiropractic Practice Acts: Texas Act Unconstitutional and Void.—A separate chiropractic practice act was enacted in Texas in 1943 (Acts, 1943, ch. 359) creating an independent board of chiropractic examiners to examine and license applicants, qualified as set out in the act, for licenses to practice chiropractic, as defined in the act, and making it a misdemeanor for any unlicensed person to practice chiropractic or for any person to advertise as a chiropractor without following his name with the term "chiropractor." Halsted was charged in the county court of Johnson County, Texas, with practicing chiropractic without a license and with advertising as a chiropractor without following his name with the term "chiropractor." He was arrested and taken into custody and subsequently he instituted in the district court, Johnson County, habeas corpus proceedings for discharge from that arrest. He contended that the chiropractic practice act was unconstitutional and void and that the offenses charged against him were not based on any valid law. He was denied relief, was remanded to custody and appealed to the court of criminal appeals of Texas.

A provision in the Texas constitution, said the appellate court, permits the legislature to pass laws prescribing the qualifications of practitioners of medicine in Texas but expressly provides that "no preference shall ever be given by law to any schools of medicine" (Texas Constitution, art. 16, sec. 31). By authority of this provision, as well as by the general police power to protect the public health, the legislature has in the medical practice act expressly defined the practice of medicine and has prescribed rules and regulations governing its practice. That act provides that any person shall be regarded as practicing medicine who for money or other compensation treats or offers to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method (Vernon's Penal Code, art. 741). The medical practice act, as well as the definition of "practicing medicine," just adverted to, has been sustained as valid not only by this court but by the Supreme Court of the United States. In construing the medical practice act and in determining what constitutes the practice of medicine thereunder, this court has consistently held that one who publicly professes to treat diseases or disorders as a profession or avocation is practicing medicine, regardless of the system or method employed, the name by which the system is known, or whether or not drugs or surgery are used. The practice of medicine, as contemplated by the medical practice act, is not restricted to the treatment of diseases and disorders of the human body by the use of drugs or surgery and embraces the practice of chiropractic and osteopathy similarly and did embrace the practice of optometry prior to the passage of the optometry practice act. It is apparent that by the passage of the chiropractic practice act the legislature intended to take the practice of chiropractic out of the field of the practice of medicine as defined in the medical practice act, to set up chiropractic as an "independent science" separate and distinct from the practice of medicine and, by special treatment and classification, to authorize practitioners of chiropractic to treat diseases of the human body. So, then, the question before us is whether or not the act expresses the legislative intent in a valid, definite, understandable law. If so, did the legislature have the authority to enact such a law?

With respect to the question as to whether or not the act before us, said the court, is a valid, definite, understandable law, the definition the legislature gave to the term "chiropractic" in the act is of paramount importance. The term is defined in sections 3 and 3a of the act as follows:

> Sec. 3. Chiropractic is defined to be the Science [sic] of analyzing and adjusting the articulations of the human spinal column, and its connecting tissues, without the use of drugs or surgery. Chiropractic shall in no sense be construed or defined as treatment or attempted treatment of patients by use of surgery or medicine. It is hereby declared the purpose of the Legislature to make as definite the distinction between Chiropractic and other sciences as the distinction between Dentistry and Medicine.
>
> Sec. 3a. No chiropractor shall treat any patient for any ailment or illness except by chiropractic as that term is herein defined. Provided that it shall be a violation of this Act for any person licensed hereunder to treat any person for infectious or contagious diseases or to engage in the practice of medicine.

Section 3, it will be noted, is divided into two parts: one positive, the other negative; that is to say, one sets forth what chiropractic is, while the other sets forth what it is not. These, taken together, constitute the definition of chiropractic. By the positive, chiropractic is the "science of analyzing and adjusting the articulations of the human spinal column, and its connecting tissues, without the use of drugs or surgery." Under the negative, "Chiropractic shall in no sense be construed or defined as treatment or attempted treatment of patients by use of surgery or medicine." It is not the practice of medicine but is separate and distinct therefrom. The terms "surgery" and "medicine," not being specially defined, are used in the sense in which they are commonly understood. So, then, under section 3 it may reasonably be said that chiropractic is the science of analyzing and adjusting the articulations of the human spinal column, and its connecting tissues, without the use of drugs or surgery, and that it is not the practice of medicine as defined in the medical practice act but is separate and distinct therefrom. Section 3a of the act states the rights, powers and privileges conferred on chiropractors that of necessity have a bearing on, and become a part of, the definition of chiropractic, for whatever a chiropractor may lawfully do as a practitioner becomes a part of the definition of the practice. The first part of section 3a prohibits a chiropractor from treating a patient except by chiropractic as defined. By the application of familiar rules of statutory construction that means that a chiropractor may treat a patient for an illness or disease, except infectious and contagious diseases, by chiropractic, but in the same section it is made a violation of the act for a chiropractor "to engage in the practice of medicine," which, as we have shown, means, of necessity, that a chiropractor, by chiropractic, was prohibited from treating or offering to treat diseases or disorders of the human body for compensation. Section 3a, therefore, by its terms, authorizes the chiropractor to treat patients for all ailments and diseases except those that are infectious and contagious, and, at the same time, makes it unlawful for him to do so. As thus construed, sections 3 and 3a are in irreconcilable conflict, for, by the terms thereof, a chiropractor is both permitted to treat and is prohibited from treating patients for illnesses and diseases. He is both within and without the provisions of the medical practice act defining the practice of medicine. Such being true, it is impossible, from the wording of the act, to determine what is chiropractic and the practice thereof and whether the same is or is not the practice of medicine under the medical practice act, as judicially determined.

The chiropractor recognized this conflict between sections 3 and 3a but insisted that what the legislature intended in prohibiting a chiropractor from practicing medicine was that he could not practice medicine by means or methods other than those comprehended in the practice of chiropractic and that so long as he treated patients by chiropractic he was not practicing medicine. But, answered the court, if the chiropractor's views are accepted then the validity of the chiropractic practice act depends on the power of the legislature to say that one who treats a patient for noncontagious or noninfectious diseases or disorders, by analyzing and adjusting the articulations of the human spinal column and its connecting tissues, and without the use of drugs or surgery, is not practicing medicine within the meaning of the medical practice act. This resolves itself to the question as to whether or not the legislature has the power and authority to pass such a law, and thereby to create and to set aside, as an independent class, treatment of diseases and disorders of the human body by chiropractic. There is no question but that the legislature is authorized to regulate and control the treatment of diseases and disorders of the human body. The legislature also may make reasonable classifications of practitioners in that field and such classifications are not inhibited by the provisions of the federal constitution prohibiting class legislation. This was recognized as not prohibiting

the legislature from passing the optometry practice act and appears also as the doctrine on which the validity of the acts of other states controlling and regulating the practice of chiropractic has been upheld. But in this state the authority of the legislature to enact legislation touching the practice of medicine, or the healing art, has been expressly limited by that provision of our state constitution providing that no preference shall ever be given by law to any school of medicine. No similar constitutional provision is in effect in any other state, and therefore the fact that other states have authorized the practice of chiropractic as an independent field of endeavor, as being outside the field of the practice of medicine, is of no consequence or relevancy here. The chiropractic practice act of Texas must be construed in the light of the Texas constitution.

The fact, continued the court, that we have previously upheld the constitutionality of the separate dental and optometry practice acts enacted in this state has no bearing whatsoever on the right of the legislature to enact a separate chiropractic practice act in this state. Admittedly there is no question as to the constitutionality of the optometry practice act or of the dental practice act. In both cases the legislature restricted the practitioners of optometry and of dentistry to a particular part of the body. In the case of optometry the optometrist is expressly precluded from treating the eye for disease or disorder and from treating for diseases and disorders of the human body. In the case of dentistry the dentist is restricted to a certain part of the human body and is not authorized to treat the body generally for a disease or a disorder. Chiropractic, on the other hand, relates to the whole of the body and authorizes the treatment thereof for diseases or disorders.

The final question to be determined by the court was whether or not the chiropractic practice act was in violation of that clause of the Texas constitution which provides that no preference shall ever be given by law to any schools of medicine. This provision, said the court, has been the basis on which has rested the legislative control over, and definition of, the practice of medicine. It furnishes the direct reason why the courts have steadfastly held that, if one treats or offers to treat, as a business, profession or avocation, diseases of the human body by any method, system or means, he must first qualify himself to do so by taking the same examination that is required of all others doing the same thing, regardless of the system employed. The term "schools of medicine," used in the constitutional provision referred to, has reference to the system, means or method employed, or the schools of thought accepted, by the practitioner. Under the medical practice act one desiring to practice medicine must possess certain qualifications as to character and educational attainments and must pass a satisfactory examination on certain basic subjects. Under the chiropractic practice act one desiring to practice chiropractic must also possess certain qualifications of character and educational attainments and must pass a satisfactory examination on certain basic and special subjects. The educational qualifications imposed by the medical practice act and the chiropractic practice act materially differ, those qualifications imposed by the medical practice act being decidedly more onerous. Assuming, then, that under the chiropractic practice act the legislature has set up, recognized and defined chiropractic as a separate system for the treatment of diseases and that practitioners thereof are authorized to treat, by chiropractic, patients for diseases and disorders, it is evident that the legislature has preferred chiropractic and chiropractors over all others engaged in treating the human body for diseases and disorders because the chiropractor is not required to have the same educational qualifications, nor is he required to pass examinations in the same subjects that are required of others similarly situated. The preference accorded the chiropractic system does not stop there, for we know that prior to the enactment of the chiropractic practice act one who had qualified under the medical practice act was at perfect liberty to practice by the chiropractic system, or by any other system that to him seemed proper. The law did not control, or attempt to control, the licensed practitioner under the medical practice act in the system, means, or method he employed. All that the law required was that if one treated diseases as a calling he must first qualify himself to do so by passing satisfactorily the examination required of all others similarly situated and coming within the same class. This is no longer true under the chiropractic practice act, because even though one be licensed to practice medicine under the medical practice act he cannot employ a chiropractic system of treating diseases without taking and passing the examination required under this act. Thus the legislature has carved out of the field of the healing art a single system for treating diseases and has given it special treatment, limiting its use to those who qualify under the chiropractic practice act. It seems clear that this legislation violates the nonpreference clause of the Texas constitution.

When this act is construed as an overall picture, said the court, the practice of chiropractic is either definite or indefinite, certain or uncertain. If it is indefinite or uncertain, it falls by reason thereof. If it is definite and certain, it violates the nonpreference clause of the state constitution. It follows, therefore, that the chiropractic practice act is unconstitutional and void, that there exists no valid law denouncing as a crime the practice of chiropractic by one not licensed specifically so to do and that Halsted is entitled to be discharged.—*Ex parte Halsted, 182 S. W. (2d) 479 (Texas, 1944).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the Examining Boards in Specialties were published in THE JOURNAL, November 25, page 854.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ALASKA: Juneau, March. Sec., Dr. W. M. Whitehead, Box 561, Juneau.

ARIZONA:* Phoenix, Jan. 2-3. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: *Oral.* Los Angeles, Jan. 21. *Written.* Los Angeles, March 5-8. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

COLORADO:* Denver, Jan. 2-5. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

IDAHO: Boise, Jan. 8-11. Dir., Bureau of Occupational Licenses, Mrs. Lela D. Painter, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, Jan. 2-4. Supt. of Registration, Department of Registration and Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, Jan. 3-5. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 301 State House, Indianapolis 4.

MINNESOTA:* Minneapolis, Jan. 16-18. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

NEW HAMPSHIRE: Concord, March 8-9. Sec., Board of Registration in Medicine, Dr. D. G. Smith, 77 Main St., Nashua.

NORTH DAKOTA: Grand Forks, Jan. 2-5. Sec., Dr. G. M. Williamson, 4½ S. 3rd St., Grand Forks.

OHIO: *Endorsement.* Columbus, Jan. 9. *Examination.* Columbus, June. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

RHODE ISLAND:* Providence, Jan. 4-5. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 25-27. Sec., Dr. N. B. Heyward, 1329 Blandina St., Columbia.

SOUTH DAKOTA:* Pierre, Jan. 16-17. Sec., Medical Licensure, State Board of Health, Dr. G. Cottam, Pierre.

TEXAS: Dallas, Dec. 19-21. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, June. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA:* Richmond, June 20-23. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON:* Seattle, Jan. 15-17. Dir., Department of Licenses, Mr. Thomas A. Swayze, Olympia.

WEST VIRGINIA: Charleston, Feb. 26-28. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

WISCONSIN:* Madison, Jan. 9-11. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

WYOMING: Cheyenne, Feb. 5-6. Sec., Dr. M. C. Keith, Capitol Bldg., Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: Denver, Dec. 6-7. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: Feb. 10. Address State Board of Healing Arts, 250 Church St., New Haven 10.

DISTRICT OF COLUMBIA: Washington, Apr. 23-24. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: DeLand, June 1. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, Jan. 9. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, Jan. 12-13. Sec., Miss Eloise Le Beau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, Jan. 2-3. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEW MEXICO: Santa Fe, Feb. 12. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

TENNESSEE: Memphis and Nashville, Dec. 18-19. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

28:271-410 (Sept.) 1944

Q$_1$ Deflection of Electrocardiogram in Bundle Branch Block and Axis Deviation. W. A. Sodeman, F. D. Johnston and F. N. Wilson. —p. 271.
*Auricular Infarction. E. W. Young and A. Koenig.—p. 287.
Effect of Chronic Lead Poisoning on Arterial Blood Pressure in Rats. J. Q. Griffith Jr. and M. A. Lindauer.—p. 295.
Electrocardiographic and Clinical Study of Various So-Called Cardiac Drugs. R. M. Tandowsky, Norma Anderson and J. K. Vandeventer. —p. 298.
Mechanism of Electrocardiographic Syndrome of Short PR Interval with Prolonged QRS Complex. T. T. Fox and Audrie L. Bobb.—p. 311.
*Clinical Experience with Dicumarol. W. I. Gefter, D. W. Kramer and J. G. Reinhold.—p. 321.
Alterations in Form of T Waves with Changes in Heart Rate. D. Scherf. —p. 332.
Morphologic Study of Cardiac Conduction System: Part III. Bundle Branch Block. D. J. Glomset, Anna T. A. Glomset and R. F. Birge.—p. 348.
Studies on Unipolar Leads: IV. Effects of Digitalis. E. Goldberger. —p. 370.
Effect of Chronic Coronary Sinus Occlusion on Vascularity of the Dog's Myocardium. V. Lorber and A. J. Greenberg.—p. 378.
Pericarditis Associated with Primary Atypical Pneumonia. D. Finkelstein and M. J. Klainer.—p. 385.

Auricular Infarction.—According to Young and Koenig auricular infarction, as a distinct entity, is rarely reported. They report 3 cases of distinct auricular infarction without ventricular involvement. A fourth case in which the electrocardiograms showed changes apparently typical of auricular damage proved to be one of ruptured false aneurysm with hemorrhagic infiltration of the auricles. In 3 of the 4 cases there were deviations of the P-T segments conforming to that described as typical of auricular damage. In one there was also an apparent disturbance of the auriculoventricular conduction pathway; this was most likely due to the ulceration through the interventricular wall. All of the infarcts were located in the right auricle.

Clinical Experience with Dicumarol.—Gefter and his associates used dicumarol for 30 patients with thromboembolic disease. There were 14 cases of peripheral arterial occlusion, 1 case of coronary artery occlusion, 4 cases of cerebral artery occlusion, 2 cases of subacute bacterial endocarditis, 4 cases of pulmonary artery occlusion, 1 case of retinal vein thrombosis, 3 cases of thrombophlebitis and 1 case of what was probably hepatic vein thrombosis. No changes were observed in the leukocyte count, hemoglobin, blood sugar, blood urea nitrogen, van den Bergh, icterus index, bromsulphalein retention, urine specific gravity, albumin, sugar and formed elements. On the dosage schedule of 300 mg. orally for two days and 50 mg. daily thereafter the plasma prothrombin fell rapidly from 80 per cent to 25 per cent of normal in three days, was 20 per cent or less from the fourth to ninth days and then rose slowly to a level of 50 per cent in four weeks, where it was subsequently maintained. Coincidentally the clotting time rose from four minutes to a level of six minutes in three days, was six minutes or more from three to ten days and then fell slowly to a level slightly greater than normal in four weeks. The bleeding time was uninfluenced. Of the 30 patients 7 died and 23 recovered. Improvement in the peripheral vascular circulation was demonstrated in 6 of 8 cases studied. Hemorrhage, the sole manifestation of toxicity, was observed in 5 cases, in all of which recovery occurred. The only reliable method of ascertaining the proper dose of dicumarol is by frequent plasma prothrombin determinations.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

52:245-352 (Sept.) 1944

Roentgenographic Diagnosis of Small Central Protruded Intervertebral Disk, Including a Discussion of Use of Pantopaque as Myelographic Medium. B. Copleman.—p. 245.
Iodized Oil Myelography of Cervical Spine: Observations on Normal and on 5 Patients with Ruptured Intervertebral Disks of Lower Cervical Spine. B. S. Epstein and L. M. Davidoff.—p. 253.
Roentgen Analysis of Motion of Lower Lumbar Vertebrae in Normal Individuals and in Patients with Low Back Pain. C. Gianturco. —p. 261.
Noninjection Method for Roentgenographic Visualization of Internal Semilunar Cartilage: Technic and Analysis of Results in 709 Examinations. L. Long.—p. 269.
*March Fracture: Analysis of 200 Cases. G. R. Krause and J. R. Thompson Jr.—p. 281.
*Peptic Ulcer of Greater Curvature of Stomach. S. D. Blum.—p. 291.
Roentgen Appearance of Common Duct Stone. O. D. Sabler and A. O. Hampton.—p. 298.
Pulmonary Changes in Chronic Cystic Pancreatic Disease. G. J. Baylin. —p. 303.
Roentgen Diagnosis of Pancreatic Disease. M. H. Poppel and R. H. Marshak.—p. 307.
*Roentgenologic Observations in Mesenteric Thrombosis. R. A. Rendich and L. A. Harrington.—p. 317.
Giant Hemangioendothelioma with Thrombocytopenic Purpura: Results of Roentgen Therapy. A. W. Rhodes and F. J. Borrelli.—p. 323.
Direct Visual Guidance: Triangulation Roentgenoscopy in Removal of Opaque Foreign Bodies. W. E. Roberts.—p. 327.

March Fracture.—Krause and Thompson report a study on 200 soldiers with 220 march fractures of the metatarsals. The immediate cause of the fracture is the rhythmically repeated, subthreshold traumas incident to marching, which, acting by summation, reach a point beyond the ability of the bone to bear stress. Fatigue of the calf muscles causes these subthreshold injuries to be accentuated. Observations on the 200 men with march fractures and on 400 controls revealed that these fractures usually occur within the first six months of training, especially among infantrymen. The second and third metatarsals are most frequently involved. One half of the fractures are seen and can be diagnosed before callus formation occurs. The fractures vary in extent from a narrow "hair line" to actual comminution. A small proportion (7 per cent) cannot be diagnosed on the first examination but will be apparent on reexamination after a few days. Careful study of technically perfect roentgenograms is a requisite. The nature of the soldier's previous occupation and his body build have no relation to the cause of march fracture. The presence of a short first metatarsal is not a predisposing cause. A slender foot does not appear to be a significant predisposing cause. The authors think that these fractures will continue to occur in the course of training soldiers. The most important fact is that early recognition and proper conservative treatment restore these men to duty with a minimum of lost time.

Peptic Ulcer of Greater Curvature of Stomach.—Blum stresses the rarity of benign ulcers of the greater curvature of the stomach, pointing out that only 15 proved cases have been found in the literature. The real incidence of these ulcers is unknown, mainly because of lack of histologic proof and inadequate follow-up of the cases reported. The author reports the history of a patient with a large ulcer on the greater curvature which was demonstrated roentgenographically and proved by surgical resection and histopathologic examination. The patient is alive and well, without symptoms of peptic ulcer, six months postoperatively. According to the literature and the best medical opinion, a niche located on the greater curvature of the stomach should be considered malignant until proved otherwise.

Roentgenologic Observations in Mesenteric Thrombosis.—Rendich and Harrington describe roentgenologic observations in 3 cases of superior mesenteric thrombosis. There was one common and striking finding in the plain roentgenogram of the abdomen in these cases which the authors believe has some diagnostic merit: namely, distention of the small bowel and the right half of the colon, simulating a mechanical obstruction. The gas collection ended abruptly at the left end of the transverse colon. The distended bowel corresponded to the

distribution of the superior mesenteric vessels. In 1 case a barium enema was given and no mechanical lesion was found although expected by the sharply demarcated distention down to the splenic flexure as noted in the flat roentgenogram of the abdomen. This observation suggests the possible value of a sign complex in the diagnosis of superior mesenteric occlusion: the free passage of the barium through a section of intestine so distended as otherwise to suggest a mechanical obstruction. One of the 3 patients whose histories are reported died. The other 2 patients made a complete recovery after bowel resection. The literature indicates that distention is a frequent symptom in mesenteric thrombosis. The authors deplore that roentgen examination of the abdomen is too often neglected in the presence of acute abdominal symptoms. They think that the roentgenologic observations in their 3 cases suggest that the possible diagnosis of thrombosis of the superior mesenteric vessels should be among those considered when the plain roentgenogram of the abdomen discloses bowel dilated down to the region of the splenic flexure, simulating a mechanical obstruction. If a subsequent barium enema reveals no obstruction, it is believed that the diagnosis may be ventured with some probability.

Archives of Otolaryngology, Chicago

40:157-232 (Sept.) 1944

Traumatism of Frontal Sinuses. R. A. Fenton.—p. 157.
Vertical Nystagmus Produced by Peripheral Labyrinthine Lesions. E. A. Spiegel and N. P. Scala.—p. 160.
Pseudomembranous Angina Followed by Partial Pharyngeal Paralysis. J. V. M. Ross.—p. 164.
Management of Alveolar Fistula. F. T. Hill.—p. 167.
Otolaryngologic Aspect of Frontal Meningocele: Report of Cases. E. A. Stuart.—p. 171.
Primary Tumors of Stensen's and Wharton's Ducts. F. A. Figi and W. D. Rowland.—p. 175.
Preepiglottic Space: Its Relation to Carcinoma of Epiglottis. L. H. Clerf.—p. 177.
Ossifying Fibroma of Superior Maxilla. H. J. Hara.—p. 180.
Hemangioma of Adult and of Infant Larynx: Review of Literature and Report of 2 Cases. G. B. Ferguson.—p. 189.
*Prevention of Secondary Post-Tonsillectomy Hemorrhage with Sulfathiazole Gum. F. H. McGovern.—p. 196.
Surgical Treatment of Nasal Obstruction: Indications for Plastic Approach to Septal Deformity; Details of Plastic Procedures. N. A. Bolotow.—p. 198.
Peroral Endoscopy. L. H. Clerf, J. R. Fox and S. J. Ryan.—p. 210.

Sulfathiazole Gum in Secondary Post-Tonsillectomy Hemorrhage.—According to McGovern, secondary hemorrhage takes place usually from three to fourteen days after operation, often at the time the slough is separating from the tonsillar fossa. The methods of controlling secondary hemorrhage include blood transfusion, injection of the fossa with a solution of procaine hydrochloride and epinephrine hydrochloride and local application of astringents and coagulants. Most often the gentle removal of the clot, sedation with a morphine salt and pressure applied to the fossa with cotton sponges are sufficient to control the bleeding. Cauterizing the bleeding point with a saturated solution of silver nitrate is often successful, provided the silver nitrate can be accurately applied to the dried area. Cunningham found the local application of powdered sulfapyridine to be effective in the control of vascular oozing in delayed tonsillar hemorrhage. Preliminary study of the effects of routine postoperative use of sulfathiazole gum indicated a reduction in the incidence of secondary hemorrhage. The gum used contained 3¼ grains (25 mg.) of sulfathiazole; when the gum was chewed for one-half to one hour the average salivary concentration of sulfathiazole was 70 mg. per hundred cubic centimeters. The blood sulfathiazole of children chewing one tablet for one-half hour for twelve daily doses showed a maximal concentration of 0.5 mg. per hundred cubic centimeters. Adults chewing two tablets for the same period showed a peak concentration of 0.8 mg. per hundred cubic centimeters. The gum is pleasant, practical, simple to administer and well tolerated by the patient; no untoward effects have been noted. The dose is one to two tablets chewed for one-half to one hour, four to six times a day, depending on the age and the weight of the patient. A preliminary study of the routine use of sulfathiazole gum after tonsillectomy indicated a reduction in the incidence of secondary hemorrhage.

Archives of Pathology, Chicago

38:123-186 (Sept.) 1944

Argentaffin Tumors of Gastrointestinal Tract. G. Ritchie and W. T. Stafford.—p. 123.
Pseudocarcinomatous Hyperplasia in Primary, Secondary and Tertiary Cutaneous Syphilis. H. Lawrence.—p. 128.
Diverticula and Duplications of Intestinal Tract. J. L. Bremer.—p. 132.
*Carcinoma in Young Persons. R. P. Morehead.—p. 141.
Recent Research in Pathology of Burns. H. N. Harkins.—p. 147.
Adenoma of Apocrine Sweat Glands (Hidradenoma) of Anal Canal. W. L. Cooper and J. R. McDonald.—p. 155.
Arteriosclerosis. W. C. Hueper.—p. 162.

Carcinoma in Young Persons.—Morehead presents the histories of 2 patients in whom carcinoma of the cervix occurred at or below the age of 20. Adenocarcinoma constitutes only about 5 per cent of the epithelial cancers which arise in the cervix, yet of the 15 reported cervical cancers proved to be carcinoma in persons 20 years of age or under more than two thirds were adenocarcinomas. Squamous cell carcinoma is rapidly fatal in the young, while adenocarcinoma offers a much better prognosis. Three cases of carcinoma of the body of the uterus arising under the age of 30 have been added to those already reported. The course of fundal neoplasms occurring in young persons appears to be influenced mostly by the morphologic type. It has been impossible to determine the influence of age on the morphologic type of these tumors. Primary carcinoma of the liver characteristically occurs between the ages of 40 and 60, but the disease has been seen in newborn infants, and Steiner has collected 75 cases in which it arose during childhood. In 41 of these cases it occurred before the age of 2 years. The occurrence of carcinoma of the liver in infants and young children suggests that at least in some cases congenital factors may play a part in the etiology. The disease is rapidly fatal, and age does not influence its course or morphologic character. To those tumors diagnosed as primary carcinoma of the liver which have been reported as occurring in young persons the author has added 2 more, 1 in a boy of 13 and the other in a youth of 18.

California and Western Medicine, San Francisco

61:129-178 (Sept.) 1944

*Coccidiodomycosis in Western Flying Training Command. R. V. Lee.—p. 133.
Rh Factor in Intragroup Hemolytic Transfusion Reactions. R. W. Hammack.—p. 135.
*Cheese Borne Epidemics of Typhoid Fever. K. F. Meyer.—p. 137.
Occupational Adjustment of Disabled. H. D. Hicker.—p. 139.
Treatment of Acute Naval Casualties. F. H. Downing.—p. 141.
Food Poisoning Due to Custard Filled Pastry: Report of Outbreak; Causative Organism, B. Typhi-Murium. J. C. Geiger and A. B. Crowley.—p. 143.
Present Importance of Tropical Diseases. W. McD. Hammon.—p. 145.
Problem of Syphilis as Handled in U. S. Navy. H. D. Newton.—p. 149.

Coccidioidomycosis.—Lee says that all new personnel coming to the air fields are skin tested, and the negative reactors are retested six months later. All suspicious clinical cases in the dispensaries and hospitals are skin tested, and in addition specimens of blood are sent to the Army Epidemiological Board for confirmatory evidence when indicated. Over a quarter of a million skin tests have been given, a thousand or more clinical cases recognized and nine complete necropsies done. The author differentiates three forms of coccidioidomycosis: primary, intermediate and advanced. The primary form is usually subclinical. The only evidence of its having occurred is the finding of a positive skin test in an individual who was previously negative. This will occur in about 10 per cent of personnel, but some stations have reported as high as 80 per cent of the post population turning positive. Frequently, what would ordinarily pass as a cold, mild influenza or "desert rheumatism" is properly diagnosed as coccidioidal infection. When erythema nodosum occurs, the diagnosis is suspected much more frequently. The intermediate (or pulmonic) stage is the one which is most frequently recognized clinically. This is an acute, subacute or chronic pulmonary inflammation. It resembles tuberculosis. Cavities occur frequently, but they show a great tendency toward spontaneous closure. The advanced or disseminated form is about 100 times as likely to occur in the Negro as in the white soldier. Dissemination, if it occurs, is likely to occur early. If there are going to be late disseminations, the problem

will be very difficult. In the disseminated cases almost every organ of the body has been involved; the body may be literally riddled with cold abscesses. There have been a few cases of dissemination in which apparent recovery occurred. That dissemination may be impending can often be anticipated from a rising titer in the complement fixation test. There is no effective treatment.

Cheese Borne Epidemics of Typhoid.—Meyer states that during the months of April and May the California State Health authorities were greatly baffled by an increased incidence of typhoid in four counties. All of the 77 cases were due to type C Eberthella typhosa. Epidemiologic inquiries revealed that all patients had consumed unpasteurized Cheddar cheese of the unripened variety. Persons who had eaten the cheese in cooked form were not attacked. The literature on epidemics of typhoid caused by cheese shows that the infective agent invariably reached the cheese through the use of raw milk accidentally contaminated by a carrier or an ambulatory patient. Adequate pasteurization of the milk, or pasteurization at any stage in the cheese making process, should render fresh, unripened cheese safe. The consumer and the industry continue to argue as to whether or not the flavor is destroyed or the quality is injuriously affected by heating the milk. Other means have been suggested. Since ripening requires weeks or several months, it has been stated that cured cheeses of the Cheddar type are safe if they are held in storage for one or two months. These conclusions are based on the studies of Wade and Shere, who showed that in artificially infected cheeses held at 60 C. the typhoid bacilli lived for from thirty-four to thirty-six days. Other investigators maintain that the manufacturer of Cheddar cheese cannot depend on the acids or on the antibiotic forces liberated by the ripening process to free his product from disease producing micro-organisms. In California the Agricultural Code has been amended to the effect that all cheese sold to the retail trade must be pasteurized or manufactured from milk which has been pasteurized, except cheese which has been allowed to ripen or cure for a minimum of sixty days. As a further protection, all cheeses in California must be labeled as to date, place of manufacture and grade.

Connecticut State Medical Journal, Hartford

8:581-658 (Sept.) 1944

Planning for Medical Care. J. R. Miller.—p. 586.
Cancer of Cervix in Pregnancy. A. H. Morse.—p. 592.
Study of Fetal Mortality at Hartford Hospital. Ruth M. Anderson. —p. 595.
Diseases of Spine. A. Oppenheimer.—p. 598.
Treatment of Subcoracoid Dislocations. H. W. Wellington.—p. 602.
Meningococcic Infections. K. K. Gregory.—p. 604.
Some New Socioeconomic Developments in Medicine. J. C. Leonard. —p. 610.
Position of American Cancer Society and Field Army in Connecticut. A. N. Creadick.—p. 612.

8:659-724 (Oct.) 1944

Treatment of Deformity from Burns. V. H. Kazanjian.—p. 661.
Current Trends in Diabetes Mellitus: A Clinical Review. B. Greenhouse.—p. 671.
Industrial Dermatitis. L. Tulipan.—p. 674.
Preventive Medicine in Chemical Industry. J. H. Foulger.—p. 677.
Suggestion as Cause of Disease. P. P. Swett.—p. 683.

Diseases of Chest, Chicago

10:391-470 (Sept.-Oct.) 1944

Transitory Migratory Pulmonary Infiltrations Associated with Eosinophilia (Loeffler's Syndrome), with Report of Additional Case. J. W. Peabody.—p. 391.
Cavernous Breathing: Is There Such a Sound? G. G. Ornstein.—p. 407.
*Treatment of Bronchial Lesions by Inhalation of Nebulized Solution of Sodium Sulfathiazole. I. L. Applebaum.—p. 415.
Funnel Chest: Report of Case Successfully Treated by Chondrosternal Resection. J. R. Phillips.—p. 422.
Broncholithiasis. W. S. Anderson and J. B. MacKay.—p. 427.
Cystic Disease of Lung with Iodized Oil Studies. H. V. Madsen and H. B. Pirkle.—p. 433.
Paradox of Vocational Disability. L. Brahdy.—p. 442.

Inhalation of Nebulized Solution of Sodium Sulfathiazole in Bronchial Lesions.—Applebaum treated 50 patients with infectious bronchial lesions by inhalation of nebulized sulfonamides. These patients had given no adequate response to sedation, expectorants, iodides, bronchodilating drugs, bronchoscopy, instillation of iodized oil, oral sulfonamides, clearance of upper respiratory foci and vaccines. Each case was selected on the basis of the following criteria: (1) symptoms of cough and expectoration of more than six weeks' duration; (2) no response to previous modes of therapy; (3) the presence of a bronchial lesion of bacterial origin. In several instances the noninfectious type of asthma was treated for the purpose of control. A 5 per cent solution of sodium sulfathiazole was placed in a nebulizer, and this was connected by a rubber tube to an oxygen tank equipped with a flow meter. A rate of flow of 4 liters per minute was found satisfactory. The patient held the nozzle of the nebulizer between the teeth and breathed with the mouth open for a period of twenty minutes. Treatments were administered three times daily for an average of ten consecutive days. It was determined that approximately 2 cc. of the solution was utilized in a single treatment. Definite improvement resulted in 43 of the 50 cases treated. This preliminary survey indicates the promising therapeutic possibility of sulfonamide nebulization in a resistant type of respiratory infection.

Journal of Lab. and Clinical Medicine, St. Louis

29:889-1000 (Sept.) 1944

Sulfonamide Resistant Gonorrhea Treated with Urea and Sulfonamide by Mouth. M. A. Schnitker and C. D. Lenhoff.—p. 889.
Acute Agranulocytosis During Sulfamerazine Therapy. G. O. Favorite, L. Reiner and R. London.—p. 899.
Isolation of Bacterium Tularense from Sputum of Atypical Case of Human Tularemia. H. N. Johnson.—p. 903.
Natural Occurrence of Tularemia in Dogs Used as Source of Canine Distemper Virus. H. N. Johnson.—p. 906.
Vi Agglutinative Properties for Bacterium Typhosum Demonstrated Following Infection with Malaria Parasites. M. B. Coleman.—p. 916.
Studies on Absorption of Sulfonamides from Gastrointestinal Tract of Albino Rats. E. H. Loughlin, R. H. Bennett, Mary E. Flanagan and S. H. Spitz.—p. 921.
Cold Agglutinins in Tuberculosis. E. Bridge, A. Thurston and A. Repicci.—p. 936.
Incidence of Plasma Coagulating Staphylococci in Feces of Chronic Invalids. G. H. Chapman.—p. 938.
Allergy from Timbó (Lonchocarpus H. B. K.): Report of Case. A. O. Lima.—p. 939.
Observations on Hematologic Actions of Acetanilid and Acetophenetidin in Dog. E. J. Van Loon and B. B. Clark, with technical assistance of Dorothy Blair.—p. 942.
Effect of Estrone on Anaerobic Glycolysis of Uterus of Rat in Vitro. Beatrice M. Sweeney.—p. 957.
Studies on Ingestion of Large Quantities of Protein and Amino Acids. A. H. Free and J. R. Leonards.—p. 963.

Journal National Malaria Society, Tallahassee, Fla.

3:159-226 (Sept.) 1944

On Parasite Density Prevailing at Certain Periods in Vivax Malaria Infections. M. F. Boyd.—p. 159.
Relation of Intersection Line to Production of Anopheles Quadrimaculatus. L. E. Rozenboom and A. D. Hess.—p. 169.
Water Level Management for Malaria Control on Impounded Waters. A. D. Hess and C. C. Kider.—p. 181.
Airplane Dusting for Control of Anopheles Quadrimaculatus on Impounded Waters. C. W. Kruse, A. D. Hess and R. L. Metcalf. —p. 197.
Permanent Works for Control of Anophelines on Impounded Waters. E. L. Bishop and F. E. Gartrell.—p. 211.
Selection of Antimosquito Methods to Fit Specific Malaria Control Programs. N. H. Rector.—p. 221.

Medical Annals of District of Columbia, Washington

13:319-362 (Sept.) 1944

*Cruveilhier-Baumgarten Syndrome: Report of 2 Cases. W. M. Yater and J. P. Kenrick.—p. 319.
Pentothal Sodium as Rectal Analgesic During Labor. S. M. Dodek and S. Katzman.—p. 325.
Mortality of Acute Obstruction of Small Intestines. J. R. Veal.—p. 328.
Acute Gangrene of Cecum: Report of 2 Cases. O. C. Cox.—p. 332.

Cruveilhier-Baumgarten Syndrome.—Armstrong and his associates reviewed in 1942 the data on 52 previously reported cases of Cruveilhier-Baumgarten syndrome and added to the 2 previously described by them a further case which they found in the necropsy protocols of the Los Angeles County Hospital. The term "Cruveilhier-Baumgarten syndrome" may be applied to a clinical picture of portal hypertension featured by a loud abdominal murmur and frequently a thrill. From Armstrong's analysis it appears that cases presenting the syndrome and having adequate necropsy descriptions can be divided into two large groups and seven subgroups. One of these categories (group

1 A) includes 6 cases that fulfil the criteria of Cruveilhier and Baumgarten as instances of congenital patency of the umbilical vein and atrophy of the liver with little or no cirrhosis and splenomegaly. This combination is designated "Cruveilhier-Baumgarten disease" (in contrast with "syndrome"). Any other disease that results in portal hypertension and happens to utilize umbilical collaterals excessively may produce a similar clinical picture, the "Cruveilhier-Baumgarten syndrome." Yater and Kendrick report 2 such cases. The first concerned a woman aged 53, the second a man aged 31. These 2 cases bring the total reported number to 57. One patient is still alive without complaints; the other died but necropsy was refused. Both patients had disease of the liver, probably cirrhosis. The murmur and thrill are most intense in the umbilical or epigastric regions and are generally continuous. The murmur has been described as a venous murmur, a hum, a roar, a "mill-like" murmur, a hollow spinning wheel sound and a grinding sound. Armstrong states that the production of the murmur probably depends on the passage of blood to an area of different caliber or direction, the eddying of a current in a blind dilated venous sac or pouch, or the flowing of the blood through constrictions in the course of a dilated and tortuous vein. Yater and Kendrick think that the murmur results from the flow of blood from small vessels into large ones in or close to the abdominal wall. For such a situation it is not necessary to assume that patency of the umbilical vein exists. They believe that if care is taken to auscultate the epigastrium in cases of disease of the liver, mainly advanced cirrhosis, such a murmur will be discovered more often.

Nebraska State Medical Journal, Lincoln

29:265-296 (Sept.) 1944

Medical Problems of Selective Service. E. B. Badger.—p. 268.
Functional Somatic Complaints in Army: Consideration by Psychiatrist. C. H. Barnacle.—p. 274.
Functional Somatic Complaints in Army: Consideration by an Internist. E. V. Allen.—p. 278.
Penicillin in Acute Osteomyelitis: Report of Case. T. Riddell —p. 284.
Rickettsial Diseases. L. O. Vose.—p. 285.

29:297-328 (Oct.) 1944

Occiput Posterior Positions. J. C. Litzenberg.—p. 300.
B Vitamin Deficiencies in Clinical Medicine. L. E. Holt Jr.—p. 304.
Surgical Treatment of Peptic Ulcer. S. J. Carnazzo.—p. 308.
*Fluorescence Microscopy: Its Value in Studying Tuberculous Tissues. F. H. Tanner.—p. 312.
Report of New Practice Act. C. Selby.—p. 315.
Presentation of Oliver Wendell Holmes Trophy. R. H. Loder.—p. 318.

Fluorescence Microscopy in Tuberculosis.—Hagemann in 1937 first proposed staining bacteria with fluorescent dyes and examining them with the fluorescence microscope. He discovered that the dye auramine would stain Mycobacterium tuberculosis and that the organism, once stained, would resist decolorization in acid alcohol, whereas other organisms readily decolorized. The auramine was as specific for acid fast organisms as was fuchsin. The auramine stained bacilli appeared yellow, while the background was black. Tanner showed that this method detected organisms more frequently than did the usual carbolfuchsin method. He noticed, in studying tissue sections with the usual hematoxylin-eosin stain, a small area of granulomatous nature. Sometimes this lesion is so small that additional sections of the same block of tissue may not contain the suspected lesion. In such instances the original hematoxylin-eosin slide can be put in xylene to remove the cover slip. Then the slide is placed in acid alcohol to remove the stain. After allowing the tissue to dry, it can be stained with the fluorescent dye auramine, exactly as if this was to be the original stain. The same granulomatous lesion can thus be checked by the fluorescence microscope for the presence of acid fast organisms. The staining by auramine does not interfere with the subsequent staining by fuchsin, and thus a comparison of the number of organisms stained by each method may be made. The author has made such a comparison. By greatly limiting the area of tissue examined and recording on a graph the location of each organism as seen in the examination by each method, it has been possible to compare identical fields. More organisms are visible by the auramine fluorescence method, and only occasionally does an organism appear with the Ziehl-Neelsen method that has not been seen with the fluorescence microscope. The author also suggests that the fluorescence method may be of value in studying the pattern of organisms in tissue infected by Mycobacterium tuberculosis.

New England Journal of Medicine, Boston

231:405-436 (Sept. 21) 1944

Problem of Postwar Surgical Training for Returning Medical Officers. A. O. Whipple.—p. 405.
Epidemic Typhus Fever and Other Rickettsial Diseases of Military Importance. C. S. Stephenson.—p. 407.
*Differential Diagnosis of Weakness and Fatigue. F. N. Allan.—p. 414.
Extrarenal Tuberculous Lesions Associated with Renal Tuberculosis. D. S. Cristol and L. F. Greene.—p. 419.
Modern Concepts of Renal Structure and Function in Chronic Bright's Disease. S. E. Bradley.—p. 421.

Differential Diagnosis of Weakness and Fatigue.—Allan states that one of the problems most frequently encountered by the general practitioner and the internist is a complaint variously described as weakness, exhaustion, fatigue, loss of ambition, low vitality or weak spells. Data have been compiled at the Lahey Clinic on 300 consecutive cases in which weakness, fatigue or weak spells were the chief complaint. Physical disorders were found to be responsible in 20 per cent of the cases; in the others a nervous state was the cause. This state was classified as a neurosis in approximately 20 per cent and as a benign nervous state, chronic nervous exhaustion or nervous fatigue in the rest of the cases. In nearly half of the cases in which a physical disorder was found to be the cause of weakness it was possible to make a positive diagnosis by clinical observation alone. In the others, laboratory tests or roentgenograms were essential to reveal a hidden disease or confirm the diagnosis. The most frequent physical disorders were chronic infection, diabetes, heart disease, various neurologic disorders and serious diseases of the blood. Certain conditions, such as vitamin deficiency and glandular disorders, considered widespread causes of weakness by both the public and the medical profession, were actually found to be rare, and not a single case of weakness due to liver trouble, poor elimination or low blood pressure was encountered. Although a high percentage of patients with weakness or fatigue have no physical disorder, there is a group in which physical conditions of unusual interest may be discovered. In any case these symptoms warrant thorough and complete investigation.

New Orleans Medical and Surgical Journal

97:93-150 (Sept.) 1944

Tropical Medicine in United States as Result of War. E. C. Faust. —p. 93.
Distribution and Epidemiology of Important Tropical Diseases of War Areas. A. Miller.—p. 93.
Malaria. A. J. Walker.—p. 98.
Dysenteries. J. S. D'Antoni.—p. 101.
Rickettsia Diseases: Yellow Fever, Dengue and Sandfly Fever. L. E. Napier.—p. 108.
Hemoflagellate Infections. H. A. Senekjie.—p. 112.
Filariasis and Schistosomiasis. E. C. Faust.—p. 115.
Recurrent Malaria in Military Personnel. W. D. Stubenbord.—p. 120.
Patient-Physician Relationship. T. A. Watters.—p. 122.
Combined Use of Fever and Chemotherapy in Syphilis. T. E. Billings. —p. 127.
Present Status of Five Day Intensive Treatment of Syphilis. H. C. Knight.—p. 130.
Treatment of Early Syphilis by Means of Eight Weeks' Mapharsen Therapy with Bismuth: Experimental Background and Application in Practice. O. F. Agee.—p. 133.

New York State Journal of Medicine, New York

44:1951-2062 (Sept. 15) 1944

Regional Anesthesia in Army. S. J. Martin.—p. 1991.
Observation of Anorectal Disease and Pilonidal Cysts in Army Hospital. J. E. Alford.—p. 1997.
Two Score Years of Pediatrics: History of Pediatric Section. T. W. Clarke.—p. 2001.
Recent Advances in Studying Problems of Healing and Their Effect on Treatment of Wounds and Burns. E. L. Howes.—p. 2006.
Treatment of Meningitis with Penicillin Injected Intravenously and Intramuscularly. A. H. Price and J. H. Hodges.—p. 2012.
Fixed Diet Regimen in Treatment of Peptic Ulcer. A. L. Garbat. —p. 2015.
Minimal Chemotherapy in Pneumonia: Preliminary Report of Two Dose Ten Gram Method Using Sulfathiazole and Sulfadiazine. L. P. Minetto.—p. 2022.

South Carolina Medical Assn. Journal, Florence

40:179-198 (Sept.) 1944

Problem of Ruptured Intervertebral Disk. R. G. Doughty.—p. 179.
*Headaches from Eye, Ear, Nose and Throat Standpoint. R. MacDonald. —p. 184.
Suggested Method of Treatment for Acute and Chronic Infections of Middle Ear. R. W. Hanckel.—p. 187.

Headaches.—Headaches related to the eye may be due to errors of refraction, accommodation anomalies, muscle imbalances and glaucoma. Patients with refraction errors complain of burning, stinging and a sandy feeling in the eyes. In glaucoma the headache at first is localized in the eye ball; later it radiates over the entire area supplied by the ophthalmic division of the trigeminal nerve. There is a rare type of ophthalmic migraine which is caused by glare, but this condition has other associated symptoms such as ocular paralysis, particularly that of the third nerve. Retrobulbar neuritis causes pain deep in the orbit and is worse when the eye is in motion. There are headaches caused by orbital tumors and by exophthalmos. Sinus headache is the most popular type of which patients complain. The public has been made sinus conscious and is aided by newspaper advertisements and radio broadcasts. The proprietary drugs advertised contain bromides and acetanilid. When first taken they will usually relieve headaches, but their continued use produces headaches and symptoms of poisoning. Many persons who have sinusitis of long standing never complain of headache; others have sinusitis and headache. The two, however, are not necessarily associated, and perhaps 5 per cent of all headaches are due to sinusitis. Maxillary sinus headaches are mostly located in the cheek and zygomatic regions and in the frontal sinus over the eyes. The sphenoidal sinus usually causes temporal and vertex headaches. Infections in the ethmoidal air cells cause pain in behind and in the inner angles of the eye. While patients are under observation, barbiturates with ephedrine will give temporary relief. Many headaches are benefited by thyroid even though the basal metabolic rate is not too low. Unilateral headaches along the branches of the sphenopalatine ganglion have been confused with sinus headaches. Cocainization of this ganglion often leads to dramatic relief. Acute otitis media may cause diffuse dull headaches around the mastoid and deep in the ear. Paracentesis usually relieves them. Where the pain is noted constantly in one area, an extradural abscess should be suspected. Occipital headaches usually point to cerebellar abscess. Headaches, plus diplopia, dysphagia and facial pains due to involvement of the sixth, ninth and fifth cranial nerves may be caused by carcinoma of the nasopharynx.

Surgery, Gynecology and Obstetrics, Chicago

79:337-448 (Oct.) 1944

*Perforating Abdominal Injuries, with Special Reference to Reduction in Mortality by Use of Transfusions and Sulfonamides. H. E. Sloan Jr.—p. 337.
Late Condition in Nerve Homografts in Man. H. J. Seddon and W. Holmes.—p. 342.
Estimation of Areas of Burns. C. C. Lund and N. C. Browder.—p. 352.
*Value of Sympathectomy in Treatment of Buerger's Disease. G. de Takats.—p. 359.
*Hypoproteinemia in Thoracic Surgery: Clinical Study. T. F. Thornton Jr., W. E. Adams and P. W. Schafer.—p. 368.
*Maternal Obstetric Paralysis. J. E. O'Connell.—p. 374.
Radiographic Examination of Ankle Joint, Including Arthrography. F. R. Berridge and J. G. Bonnin.—p. 383.
Exact Anatomy and Development of Ligaments Attached to Cervix Uteri. R. M. H. Power.—p. 390.
Reconstruction After Radical Operation for Osteomyelitis of Frontal Bone: Experience in 38 Cases. V. H. Kazanjian and E. M. Holmes. —p. 397.
Alpha Rays in Treatment of Wounds. E. M. Uhlmann.—p. 412.
New Simplified Method of Defunctionalizing Colon. E. F. Berman. —p. 419.
Rectourinary Fistula. S. F. Wilhelm.—p. 427.
Use of Venous Tourniquets as Aid to Diagnosis of Incipient Traumatic Shock. W. P. Longmire Jr., G. W. Duncan and A. Blalock.—p. 434.
Laboratory Routine for Fluid, Electrolyte and Protein Control in Surgical Patients. J. L. Carr.—p. 438.

Perforating Abdominal Injuries.—Sloan presents observations on 146 cases of perforating abdominal injuries that were explored at the Johns Hopkins Hospital between 1925 and 1943. There were 91 gunshot wounds and 55 stab wounds. Among the 87 cases explored from 1925 to 1938 there were 27 deaths, a mortality of 31 per cent. Between 1939 and 1943 there were 6 deaths in 59 cases, a mortality of 10.1 per cent. The operative technic remained essentially unchanged. The striking reduction in mortality in the years 1939 to 1943 can be attributed chiefly to the use of transfusions and sulfonamides. Improvements in anesthesia and the use of constant gastric suction or the Miller-Abbott tube would seem to have had only a small share in the reduction in mortality. It is probable that the use of blood and blood substitutes has had a greater influence in the reduction in mortality than the use of sulfonamides despite the fact that most of the deaths in recent years have been due to shock rather than to infection. Patients in shock are more susceptible to infection. The improved postoperative condition of patients receiving transfusions must have played a large part in their resistance to infection. In the perforating abdominal injuries operated on in the past five years death has been due largely to hemorrhage which could not be controlled at operation or to injury so severe that massive transfusions had little effect on the patient's state of shock. The results reviewed here, of patients treated with all the resources of a large hospital, represent a goal unattainable by the military surgeon on the battlefield. However, the use of transfusions and sulfonamides can effectively reduce the mortality of perforating abdominal wounds.

Sympathectomy in Buerger's Disease.—According to de Takats, sympathectomy in Buerger's disease does not modify the course of this disease; it is undertaken only for the purpose of improving circulation in limbs in which blood vessels are occluded. Before sympathectomy is undertaken, it is necessary to demonstrate the presence of an adequate collateral vascular bed. The disease must be in a quiescent stage and it should not show too much visceral extension. The author discusses the essential preoperative studies and describes and illustrates surgical procedures and postoperative management. In a series of 50 cases 136 sympathectomies were done. About one half of these patients have also had minor amputations combined with sympathectomy. Of the 50 patients, 37 have been rehabilitated to full time work, 7 are doing part time work and only 6 are invalids. In addition to foot hygiene and complete abstinence from tobacco, a change of occupation is important for those whose feet are continuously subjected to an exposure to cold or trauma.

Hypoproteinemia in Thoracic Surgery.—Thornton and his collaborators state that the surgical treatment of diseases of the chest may be complicated by hypoproteinemia, owing largely to the chronicity of many lung diseases and the relatively severe blood loss associated with major thoracic surgery. They investigated the effect of chest operations on plasma proteins in 32 operations on 29 patients. The operations included 14 lobectomies, 5 pneumectomies, 7 exploratory thoracoplasties, 1 partial pericardectomy and 1 first stage lobectomy. Preoperative plasma protein and hematocrit determinations were made on all patients. During the operations and in the postoperative period large whole blood and plasma transfusions were given to replace blood loss. At two day intervals following operations the plasma proteins and hematocrit determinations were repeated. The study was continued for ten days or until the readings returned to the preoperative level. A plasma protein fall of approximately 1 Gm. per hundred cubic centimeters occurred in 31 of the 32 operations. The fall usually occurred from three to five days following operation and was accompanied by a similar decrease in hematocrit, hemoglobin and, to a lesser degree, red blood cells. The principal causes of the drop in plasma protein were (*a*) diminished protein reserve, (*b*) operative blood loss, (*c*) loss of blood and plasma into the wound and pleural space after operation, (*d*) infection and (*e*) inadequate replacement. Massive transfusion of whole blood was the most satisfactory single therapeutic agent when the plasma proteins were lowered as the result of hemorrhage.

Maternal Obstetric Paralysis.—O'Connell believes that protrusion of a lumbar intervertebral disk is the factor which produces maternal obstetric paralysis in a large proportion of cases. He presents 4 case reports which indicate an increased risk of a lumbar intervertebral disk protrusion occurring in pregnancy. This may be due to changes in the intervertebral joints analogous to those known to occur in the pelvic joints during pregnancy. Such changes would render the joints concerned less fit to withstand normal stresses as well as those

additional stresses occasioned by the posture of pregnancy and by labor. The severe objective neurologic disturbance which not infrequently occurs when a disk protrudes during or after labor may perhaps be accounted for by the large size and the rapid development of the protrusion and the consequent severe involvement of nervous tissue. Changes in the lower intervertebral joints in pregnancy and the puerperium render them less fit to withstand strain. The strains of heavy work appear to be contraindicated at such times. Spontaneous cure of maternal obstetric paralysis frequently occurs, but sometimes recovery is slow and incomplete. Operation will be indicated when the motor disturbance is severe and persistent even if pain is slight. On the other hand, severe sciatic pain which does not respond to rest may indicate operation when objective neurologic disturbance is mild. In cases which fall into either of these groups, treatment by excision of the disk protrusion can be recommended.

United States Naval Med. Bulletin, Washington, D. C.

43:409-610 (Sept.) 1944. **Partial Index**

*Cultivation of Gonococcus: Advantages of Chocolate Agar with Bacto-Supplement A as Culture Medium. H. E. Morton and P. R. Leberman.—p. 409.
Choline Hydrochloride in Experimental Yellow Fever in Rhesus Monkeys. A. W. Sellards and W. S. McCann.—p. 420.
Penicillin in Sulfonamide Resistant Gonorrhea: Preliminary Report of 124 Cases. J. G. Menville and C. W. Ross.—p. 423.
Modified Intensive Method for Treatment of Primary and Secondary Syphilis. H. S. Zeve.—p. 429.
*Evaluation of Cold Agglutination Test in Primary Atypical Pneumonia. J. H. L. Heintzelman and A. W. Seligmann Jr.—p. 433.
Lobar, Broncho- and Atypical Pneumonia: Study of 500 Cases. A. W. Hobby.—p. 438.
Gastric Diseases in Navy Personnel: Study of 191 Gastroscopic Examinations. R. H. Loe and E. H. Berger.—p. 450.
Effective Management of Gastrointestinal Department at Naval Hospitals. H. A. Monat and W. T. Carleton.—p. 459.
*Passage of Miller-Abbott Tube Through Pylorus with Aid of Electromagnet. H. Mayer Jr.—p. 463.
Fractures of Carpal Navicular. H. E. Hipps.—p. 467.
Skeletal Traction in Fractures of Hand and Wrist. W. W. Ebeling.—p. 477.
Hidden Dementia Precox. J. M. Hill and H. M. Hildreth.—p. 483.
Invalidings from Service for Causes Existing Prior to Enlistment Women's Reserves. H. A. Raskin.—p. 490.
Maxillofacial Kodachrome Photography. J. W. Richter.—p. 495.
Eighteen Months on Attack Transport. H. D. Vickers.—p. 513.
Management of Fungous Infection of Feet. F. Glauser.—p. 525.

Cultivation of Gonococcus.—Morton and Leberman compared the value of the standard chocolate agar and the chocolate agar with Bacto-Supplement-A (extractives of yeast and crystal violet). The latter medium was found to be more accurate in the detection of gonococci in male urethral discharges.

Cold Agglutination Test in Primary Atypical Pneumonia.—According to Heintzelman and Seligmann the physical aspects of primary atypical pneumonia are meager, consisting usually of rales over the affected area. In the more severe cases dyspnea, cyanosis and prostration occur. Diagnosis, particularly in patients with no objective physical findings, depends on the x-ray examination. Recently the cold agglutination reaction has been found a promising adjuvant in the diagnosis of this disease. The cold agglutination reaction is based on the presence of agglutinins which cause clumping of homologous or group O red cells at low temperatures. To test for the presence of these agglutinins, serial dilutions of serum are mixed with washed suspensions of group O erythrocytes in isotonic solution of sodium chloride. The tubes are allowed to stand overnight in a refrigerator at temperatures varying from 0 to 5 C. Readings are made the next morning. The test is not infallible, since cases do not all yield a positive reaction. Furthermore, cold agglutinins have been reported in paroxysmal hemoglobinuria, trypanosomiasis, pernicious anemia, leukemia, lymphoblastoma, cirrhosis, venous thrombosis and gangrene among others. When it concurs with the clinical picture of primary atypical pneumonia, the test becomes virtually specific for this disease. The authors employed the cold agglutination test in 33 cases of primary atypical pneumonia which were proved by roentgenoscopy. Twenty-two patients showed a positive titer, that is a cold agglutination reaction in serum dilution of 1:32 or above, at some time during the course of their disease. A positive reaction has considerably more significance than a negative one. In pneumonias of undetermined etiology the detection of cold agglutinins made it possible to cease or to withhold sulfonamide therapy, as most authors are agreed that primary atypical pneumonia does not respond to this type of treatment. The test was found to be of considerable help in the evaluation of upper lobe lesions. Patients having such lesions frequently require repeated sputum and x-ray studies over long periods of time to establish the presence or absence of pulmonary tuberculosis.

Passage of Miller-Abbott Tube Through Pylorus with Aid of Electromagnet.—Mayer points out that the Miller-Abbott tube has not been as widely used as it should be because of the difficulty in getting the tip past the pylorus. Several methods have been suggested to overcome this difficulty, and in 1933 Paine suggested the use of an electromagnet. The author recently attempted to use a magnet after having failed two years ago. He found that alnico, a permanent magnetic alloy, satisfied the demand for a highly magnetic relatively noncorrosive tip. The metallic tip is fixed on the end of an ordinary Miller-Abbott tube. This is used in conjunction with an electromagnet. In all cases in which alnico is used the polarity of the tip of the tube must be determined with relation to the magnet, the latter being adjusted so that it attracts rather than repels the metallic tip. This can easily be tested prior to introduction of the tube, and if the tip is repelled by the electromagnet the polarity of the latter can be reversed by reversing the plug in the socket. The tube is passed through the nares into the stomach. After the stomach has been decompressed by attachment of a Wangensteen suction apparatus, the tube is passed down to the pylorus. Occasionally the tube will tend to loop back in the stomach, and the magnet in these cases can be applied under fluoroscopic control along the anterior abdominal wall in such a way as to guide the tip toward the pyloric antrum. Once the tip has reached the pylorus the patient is turned to the right anterior oblique position (either erect or prone) and the magnet applied firmly against the right flank posteriorly in line with the general direction of the first portion of the duodenum and at the same level as the tip of the tube as visualized under the fluoroscope. The power is then turned on and the tube slowly but steadily advanced from above. It will be seen under the fluoroscope to pass quite readily through the pylorus into the first portion of the duodenum. The magnet is then removed, the tube advanced and the balloon inflated in the usual manner. The author used this method in a small number of cases; the results are promising in that the tube can usually be passed through the pylorus within one or two minutes, and in no case has it failed.

War Medicine, Chicago

6:67-138 (Aug.) 1944

Morphine-Dextroamphetamine Analgesia: Analgesic Effects of Morphine Sulfate Alone and in Combination with Dextroamphetamine Sulfate in Normal Human Subjects. A. C. Ivy, F. R. Goetzl and D. Y. Burrill.—p. 67.
Use of Penicillin for Gonorrhea Resistant to Sulfonamide Compounds: Report of 450 Cases. L. W. Riba, C. J. Schmidlapp and N. L. Bosworth.—p. 72.
*"Suture" of Wounds by Plasma-Thrombin Adhesion. F. Young and B. V. Favata.—p. 80.
Sensitivity of Bacteria from Infected Wounds to Penicillin: Method of Assay. E. Gallardo.—p. 86.
Bacterial Content of Air in Army Barracks: Results of Study, with Especial Reference to Dispersion of Bacteria by Air Circulation System. H. M. Lemon, H. Wise and M. Hamburger Jr.—p. 92.
Problems of Fatigue as Illustrated by Experiences in Decompression Chamber. J. Romano, G. L. Engel, E. B. Ferris Jr., H. W. Ryder, J. P. Webb and M. A. Blankenhorn.—p. 102.

"Suture" of Wounds by Plasma-Thrombin Adhesion.—Young and Favata show that adherence of wound edges or surfaces can be readily accomplished by the use of plasma and purified thrombin. The fibrin fixation artificially produced in this way has less tensile strength than ordinary suture material; for this reason use of plasma-thrombin adhesion of wounds should be limited to those in which tension does not exist. Plasma-thrombin adhesion has been found useful as the sole fixation (1) for traumatic lacerations, (2) as a skin closure when a particularly fine scar is desired, (3) as a method of producing adhesion between the flaps and the chest wall in radical mastectomy and (4) as an adjunct in free skin graft. No untoward results have been observed in 69 cases in which plasma-thrombin adhesion of wounds has been used.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

25:81-110 (June) 1944

Experimental Streptococcal Lesions of Rabbit's Eye and Their Treatment. J. M. Robson and A. A. B. Scott.—p. 81.
*Tumors of Thyroid Produced by 2-Acetyl-Amino-Fluorene and Allyl-Thiourea. F. Bielschowsky.—p. 90.
Difference in Carcinogenicity Between Shale Oil and Shale. I. Berenblum and R. Schoental.—p. 95.
Production of Penicillinase by Organisms of Subtilis Group. E. S. Duthie.—p. 96.
Nature and Mode of Action of Staphylococcus Coagulase. W. Smith and J. H. Hale.—p. 101.

Tumors of Thyroid Produced by 2-Acetyl-Amino-Fluorene and Allyl-Thiourea.—Bielschowsky demonstrated that tumors can be induced in white rats by 2-acetyl-amino-fluorene. Tumors did not develop in endocrine glands. This seemed to indicate that these cells are far less susceptible to the carcinogenic action of the drug than the epithelial cells of many other organs, such as the liver or the mammary gland. From human pathology it is known that cancer of the thyroid nearly always originates in a goitrous gland. Since goiter can be easily produced in rodents, the best experimental approach to the problem at hand seemed to investigate the action of the carcinogenic agent on a goitrous thyroid gland. Acetyl-amino-fluorene was given as in previous experiments at a daily dose of 4 mg. per rat for thirty weeks. The rats received daily 5 mg. of allyl-thiourea each for the first four weeks and then 6 mg. daily until the animals were killed. Twenty rats were used. Ten received the standard diet with the addition of acetyl-amino-fluorene and allyl-thiourea; 10 served as controls and received the same diet with the addition of allyl-thiourea only. Benign and malignant tumors of the thyroid were produced in the thyroid by the combined action of allyl-thiourea and 2-acetyl-amino-fluorene. Neither drug when given alone induces neoplastic growth in the thyroid gland of the white rat. Prolonged administration of allyl-thiourea produces only a parenchymatous solid goiter; 2-acetyl-amino-fluorene does not affect normal thyroid tissue at all. The stimulated hyperplastic thyroid is, however, susceptible to the carcinogenic action of acetyl-amino-fluorene.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

51:277-376 (Aug.) 1944

*Clinically Suspect Pelvis and Its Radiographical Investigation in 1,000 Cases. M. Kenny.—p. 277.
Contracted Pelvis in Childbirth: Study of Its Morbid Effects on Mother and Child; Blair Bell Lecture, 1944. H. R. MacLennan.—p. 293.
Acute Inversion of Uterus: Case. A. E. Chisholm.—p. 318.
Primary Ovarian Pregnancy: Case. O'D. Browne.—p. 321.
Cesarean Section Under Spinal Analgesia. R. C. Thomas.—p. 324.
Iniencephalus. Susanne J. Paterson.—p. 330.
Statistical Study of Purpose and Errors of Routine Daily Measurement of Puerperal Uterus. C. S. Russell.—p. 334.
Case of Complete Placenta Previa Accreta Occurring in Primigravida. Dorothy M. Shotton and C. W. Taylor.—p. 340.
Childbirth in Greek Island of Chios in 6th Century B.C., 1780 and 1914. P. Argenti.—p. 344.
Vesicovaginal Fistula, Foreign Body and Calculi in Bladder Following Attempted Criminal Abortion and Normal Labor. R. C. Thomas.—p. 350.

Roentgenographic Investigation of Pelves of 1,000 Pregnant Women.—Kenny examined by x-rays the pelves of 1,000 women in whom clinical examination in late pregnancy or history of previous dystocia presaged abnormal labor. Women were selected for roentgenography nearly always in the last two weeks of pregnancy. The conviction was reached of the importance of the shape rather than the size of the pelvis as a guide to prognosis and conduct of labor. Thus, normal delivery has been achieved with a simple flat pelvis with a true conjugate of the brim of 3½ inches, and cesarean section found necessary with android pelves of a 4½ inches conjugate. The 1,000 roentgenograms cover the greater number of the 520 operative deliveries that were carried out. With increasing experience it became possible to forecast the course and nature of labor and delivery very accurately from the shape of the pelvis, the relative position of the fetal head and a study of the maternal powers to endure the proposed travail. A survey of the bony structures of the birth canal and its passenger evaluates the few factors that can be measured with scientific accuracy, and it should form at least the basis on which "suspect" cases may be safely treated. The various pelvic types in this clinically suspect group are classified morphologically according to the Caldwell-Moloy classification, except that the author has substituted the term "pithecoid" for "anthropoid." The incidence of the gynecoid, android, pithecoid and platypelloid combinations of these and pathologic types such as rachitic flat and osteomalacic ones are listed in a table. Taking the gynecoid pelvis as unity, the possessors of android pelvis are more than twelve times more likely to develop the mild and eight times more probably the severe forms of toxemia. Puerperal morbidity likewise is greatest in those with android and android-gynecoid pelves. The author also inquired into the similarity between the pelvis of female infants and their mother. Of 20 little girls examined in this respect, 13 had pelvis of exactly the same type as their mothers. The author urges the use of roentgenographic methods of estimating pelvic capacity in the interests of mother, child and accoucheur.

Lancet, London

2:265-300 (Aug. 26) 1944

Intrathoracic Metallic Foreign Bodies. A. L. D'Abreu, J. W. Litchfield and C. J. Hodson.—p. 265.
Clinical Trial of Globin Insulin and Other Insulins with Delayed Action. J. C. Eaton.—p. 269.
Aneurysm of Anterior Tibial Artery; with Note on Arteriography. M. Fallon.—p. 270.
Treatment of Perforating Corneal Ulcer. E. M. G. Galton.—p. 272.
Tetrathyl Thiuram Monosulfide in Treatment of Scabies. D. B. Bradshaw.—p. 273.
Bronchial Asthma Treated by Breathing Exercises. H. I. Weiser.—p. 274.

2:301-332 (Sept. 2) 1944

*Hepatitis After Yellow Fever Inoculation: Relation to Infective Hepatitis. G. M. Findlay, N. H. Martin and J. B. Mitchell.—p. 301.
*Cardiac Neurosis as Manifestation of Hypoglycemia. R. Greene.—p. 307.
Eosinophilia with Pulmonary Disease on Return from Tropics. J. Apley and G. H. Grant.—p. 308.
Note on Scalp Closure. H. Gillies.—p. 310.
Outbreak of Pneumonia in Smallpox Contacts. H. T. Howat and W. M. Arnott.—p. 312.
Superior Sulcus Tumor (Pancoast). B. A. Dormer, F. J. Wiles and J. Friedlander.—p. 312.

2:333-362 (Sept. 9) 1944

Delayed Suture of Soft Tissue Wounds. T. R. Sarjeant and W. A. Morton.—p. 333.
Systemic Administration of Penicillin. I. W. J. McAdam, J. P. Duguid and S. W. Challinor.—p. 336.
Dangers of Intensive Alkali Treatment in Blackwater Fever. B. G. MacGraith and R. E. Havard.—p. 338.
*Hepatitis After Yellow Fever Inoculation: Relation to Infective Hepatitis. G. M. Findlay, N. H. Martin and J. B. Mitchell.—p. 340.
Unhurried Blind Intubation. H. M. Bird.—p. 344
Return of Virility After Prefrontal Leukotomy, with Enlargement of Gonads. R. E. Hemphill.—p. 345.

Hepatitis After Yellow Fever Inoculation.—Findlay and his associates say that the presence in endemic yellow fever zones in Africa of considerable numbers of Europeans as well as of Africans made it important to detect yellow fever at the earliest moment, for, even though wholesale prophylactic inoculation had largely allayed anxiety, there was always the hazard that a few might have escaped immunization. In this African command every case of jaundice in military personnel has been notified whatever the presumed cause. It has thus been possible to get an idea of the incidence of infective hepatitis month by month. Late in December 1942 the notifications for jaundice began to rise rapidly. As the notifications continued to increase in January, it was found that the cases followed injection of particular batches of yellow fever vaccine used between Sept. 19 and Dec. 31, 1942. In all, 689 cases were recorded as being due to yellow fever vaccine inoculations. The average latent period among 670 cases in which the date of commencement of symptoms could be recorded was one hundred and one days. Pre-icteric symptoms were in the main visceral. Loss of appetite, nausea, lassitude and vague abdominal discomfort were the usual complaints, though occasionally the abdominal pain was severe enough to suggest biliary colic or duodenal ulceration. The physical signs were jaundice, hepatic and splenic enlargement,

abdominal tenderness and fever. There was one death in the series. No features of the clinical history or the necropsy served to distinguish this case from the findings in infective hepatitis; the terminal rise in temperature especially is characteristic of what has been seen in fatal cases of infective hepatitis. On the basis of necropsy studies in this case the authors say that both the macroscopic and the microscopic findings point to the conclusion that death was due to a progressive and overwhelming destruction of the liver parenchyma. Treatment has been along routine lines. In mild cases additional sugar has been given by mouth; in severe cases intravenous drips of 10 per cent glucose-saline solution have been used, together with 5 to 10 units of insulin a day. Up to 20 Gm. of fat was allowed a day in some cases together with small daily doses of sodium taurocholate, to assist in the absorption of vitamin K. In 2 cases with purpuric rashes, vitamin K was administered with apparently beneficial results. Latterly additional protein has been added to the diet in the form of skimmed milk up to 1½ pints daily, eggs and a purée of liver. In convalescence dried yeast has been prescribed.

Cardiac Neurosis as Manifestation of Hypoglycemia.—Greene reports that 5 patients were admitted to the hospital with the diagnosis of effort syndrome. Each patient had symptoms suggesting a cardiac abnormality, and each had a normal heart. The symptoms of the 5 patients were found to be related to hypoglycemia. The early symptoms of hypoglycemia are in reality those of excessive epinephrine secretion. Da Costa's syndrome is caused by abnormal fears. The somatic symptoms of fear are also due to excessive epinephrine secretion. It is therefore not surprising that the symptoms of hypoglycemia and of Da Costa's or effort syndrome are identical. Since the symptoms of the former can be relieved by a suitable diet, an effort should be made to evaluate the part played by abnormal carbohydrate metabolism in producing the symptoms of patients with Da Costa's syndrome or a similar cardiac neurosis.

Medical Journal of Australia, Sydney

2:101-124 (July 29) 1944

Control of Medical Equipment in Nation at War. A. Newton.—p. 101.
Psychiatry Yesterday and Today. E. S. Meyers.—p. 109.
Chronic Glaucoma of Traumatic Origin. A. W. D'Ombrain.—p. 112.

2:125-152 (Aug. 5) 1944

An Address. E. A. H. Russell.—p. 125.
Closed Intrapleural Pneumonolysis. C. G. Bayliss.—p. 129.
Irritation Produced by Procession Caterpillar (Ochrogaster Contraria). H. Flecker and A. McSweeny.—p. 137.

Practitioner, London

153:129-192 (Sept.) 1944

Clinical Manifestations of Arteriosclerotic Disease. G. Evans.—p. 129.
Diagnosis and Treatment of Coronary Diseases. T. J. Hoskin.—p. 136.
Diagnosis of Congenital Heart Disease. K. D. Wilkinson.—p. 146.
Treatment of Congestive Heart Failure. H. Cookson.—p. 155.
Management of Rheumatic Heart Disease in Early Life. A. G. Watkins.—p. 161.
Headache, Giddiness and Eyestrain. H. M. Traquair.—p. 166.

Ophthalmologica, Basel

105:121-232 (March-April) 1943

Histochemical Investigations on Demonstration and Localization of Vitamin C in Ocular Tissues. E. Bürki and A. E. Schmid.—p. 121.
Diagnostic Value of Puncture of Anterior Chamber. M. Amsler and F. Verrey.—p. 144.
Device for Capillary Centrifugation of Aqueous Humor. F. Verrey.—p. 151.
*Evaluation of Sulfonamide Therapy in Trachoma. L. Poleff.—p. 156.

Sulfonamide Therapy in Trachoma.—Poleff on the basis of observations on 1,050 trachoma patients, regards sulfonamide therapy not as a panacea but as an important adjuvant. Sulfonamide therapy will effect complete cure of trachoma only in combination with local treatment, he says. Following microscopic examination of secretions and of epithelial smears, a disinfecting treatment with silver nitrate solution or a disinfectant solution is employed for about a week. Then follows pressing out of the follicles and scraping of the diseased conjunctiva. After the irritative reaction caused by this has subsided, conjunctival massage is begun. This massage by means of a glass or silver rod must be continued for months. During all this time the patient is given sulfonamides internally. The duration of trachoma treatment averages three months. The internal sulfonamide therapy exerts a favorable influence on the secondary processes, particularly the catarrhs and corneal ulcers. During the early stage the sulfonamides act favorably also on the trachomatous follicles. Sulfonamide therapy sterilizes the trachoma infection and thus provides protection against relapses.

Hospital, Rio de Janeiro

26:1-149 (July) 1944. **Partial Index**

Megacolon, Dolichocolon and Vitamin B1. R. Britto.—p. 41.
*Etiology and Pathogenesis of Erythroblastosis of Newborn Infants. M. Pereira de Mesquita and V. R. Leite Ribeiro.—p. 85.

Etiology and Pathogenesis of Erythroblastosis Fetalis.—Three factors are necessary for the development of erythroblastosis of newborn infants: (1) A fetus with a positive Rh blood factor, whereas the mother has a negative Rh blood factor, (2) an interchange of fetal Rh erythrocytes and maternal anti-Rh agglutinins through the placental barrier, and (3) lack of group specific substances (in the placenta, the umbilical cord and the fetus) which may be able to fix and neutralize the maternal agglutinins. The first and last conditions have been proved. The passage of erythrocytes through the placenta has not been proved. The authors made daily intraperitoneal injections of dissolved erythrocytes in amounts corresponding to 1 cc. of the total blood of Rhesus monkeys for eleven consecutive days and five injections of the same dose every other day. Specific agglutinins appeared in the blood of all the guinea pigs, as proved by the occurrence of agglutination of the erythrocytes, which was equal to that which is observed after experimental immunization of guinea pigs with blood of Rhesus monkeys. The authors conclude that the stroma of erythrocytes of the fetus rather than the erythrocytes is the causal factor of the immunization of mothers and of the consequent formation on anti-Rh agglutinins by the mother and also the cause of the development of erythroblastosis in the fetus.

Revista de Otorrinolaringología, Santiago

4:4-61 (June) 1944. **Partial Index**

*Osteomyelitis of Frontal Bone. J. Otte.—p. 4.
Cancer of Esophagus. H. Garcia.—p. 29.

Osteomyelitis of Frontal Bone.—Otte reports 12 cases of chronic and acute forms of the disease. General and local infection and trauma may play a causal role. The symptoms are those of acute infection with fever, local pain and edema. The acute stage is followed by a period of complete subsidence of the symptoms, which lasts for several months. Palpebral edema, which in some cases simulates allergic edema, appears and disappears at varied intervals of weeks during the period of subsidence of the symptoms. It is a diagnostic sign of chronic frontal osteomyelitis and an indication for x-ray study of the frontal bone. Operation consists in resection of the necrotic bone and drainage. Delayed operation is the cause of the development of either a Pott's puffy tumor or a cerebral abscess. Acute frontal bone osteomyelitis is a complication of chronic suppurative sinusitis. It can be prevented by surgical removal of the outer and inner tables of the frontal sinus in cases of chronic suppurative sinusitis. The therapy consists in radical resection of the frontal bone as advocated by Mosher. Sulfanilamide and blood transfusions are indicated before the operation in cases of hematogenous type.

Klinische Wochenschrift, Berlin

22:29-88 (Jan. 23) 1943

*Treatment of Fresh Cardiac Infarction by Administration of Strophantin. E. Edens.—p. 69.
*Etiology of Epidemic Hepatitis. Additional Investigation Aimed At Virus Cultivation. W. Siede and K. Lutz.—p. 70.
Prognostic Significance of Chemoresistance in Sulfenamide Therapy for Pneumonia. S. Sjöstedt, G. Vahlne and N. Berg.—p. 74.
Treatment of Polyglobulism by Feeding with a Low Vitamin Diet. D. von Hodenberg.—p. 77.
Study of Agglutination of Blood Platelets. E. Ollgaard.—p. 80.

Strophanthin Therapy of Fresh Cardiac Infarction.—Edens states that the indirect effect of strophanthin on the functional disturbances of the coronary arteries results in the improvement of the coronary circulation and the cardiac metabo-

lism. In the majority of the cases this indirect effect compensates for its immediate unfavorable effect, such as auricular fibrillation, bigeminy and auricular tachycardia, for which the abnormal irritability of the impaired cardiac elements may be responsible. The rationale of stophanthin therapy was demonstrated in 24 cases of cardiac infarction. Treatment was instituted within the first six days of the attack. There were 20 men and 4 women. Seven patients were between the ages of 40 and 50 years, 5 from 50 to 60 years and 12 patients were over 60. Eleven patients had hypertension. Strophanthin alone was administered in 13 cases. Strophanthin combined with half an ampule of theophylline and oxyamine or with 1 mg. of dihydromorphinone hydrochloride or with both was employed in 11 cases. Strophanthin was given in doses of 0.1 to 0.3 mg. Sedatives were given three to four times daily. Seven patients died within two to sixty-five days, 1 died after two years and 1 after two and a half years. The condition of the other 15 patients was improved considerably. All the patients experienced immediate relief from the administration of the strophanthin alone and particularly after the combined strophanthin-dihydromorphinone therapy. There was not a single fatal case due to strophanthin, since death did not occur within the first hour after its administration. Clinical experience proved that one hour is required to compensate for the immediate unfavorable effect of the drug.

Etiology of Epidemic Hepatitis.—Siede and Lutz state that epidemic hepatitis is a contagious disease whose epidemiologic behavior and characteristic clinical picture suggest a specific causative agent. Human duodenal juice was used as an inoculation medium in experiments following Woodruf and Buddingh's chorioallantois cultivation method. Twenty-one specimens of duodenal juice from persons suffering with epidemic hepatitis and 5 specimens from normal persons were inoculated into large chicken eggs. Not a single embryo died from every 8 eggs which were inoculated with 1 of 3 of the 5 specimens from normal persons. One embryo died from every 8 eggs which were inoculated with 1 of the remaining 2 specimens from normal persons. Chorion and liver pulp from these dead embryos were inoculated into two series of 8 eggs, and every 1 of these eggs hatched. Results of inoculation experiments with the 21 specimens from persons suffering with epidemic hepatitis were as follows: All the eggs inoculated with 7 of the specimens hatched. In 4 additional instances many of the embryos died but cultivation of the causative agent by passage failed. Passage was performed successfully with the remaining 10 specimens. An agent was isolated from the duodenal juice, which, according to its biologic behavior, may be classified with the filtrable types of viruses. Its cultivation depends on early duodenal removal within the first days of the disease and on immediate inoculation, avoiding prolonged transportation from the residence of the patient to the place where the inoculation is performed or on using a frigidaire for the transportation. Chicken embryos died within five days on an average. Time of death varied from three to nine days, depending on the virulence of the agent. Occasionally full virulence may be maintained for from six to eight passages, but on an average it may disappear after the fourth passage. The virus seems to be hepatotropic, since the passage was particularly successful when the liver pulp of the dead embryos was used. Its stability is suggested by the fact that in the frigidaire the virus in the duodenal juice may be preserved for fourteen days, and in the embryonal tissues it may be preserved for eight days. Thermolability, however, is suggested by the fact that questionable or negative results were obtained with specimens kept for some time at a temperature of + 20 C.

22:201-220 (March 6) 1943

New Theories of Fine Structure of Protoplasm. K. Zeiger.—p. 201.
*Artificial Hypoprothrombinemia and Its Therapeutic Application. K. N. von Kaulla.—p. 205.
Study of Sutherland's Rapid Tuberculin Test. Else Gehling.—p. 208.
Function of Kidneys and Chemical Diagnosis of Renal Calculi. H. L. du Mont.—p. 210.
Qualitative Hematology. J. Arneth.—p. 213.

Artificial Hypoprothrombinemia and Its Therapeutic Application.—Von Kaulla states that thrombosis may be prevented by prolonging artificially the coagulation time of the blood. That may be obtained by a reduction of the prothrombin level, since prothrombin represents an integral factor in intravascular clotting. Experiments on rabbits and on normal men with dicumarol are reported. The prothrombin content of the blood was determined by Lehmann's modification of Quick's method. Five mg. of the compound per kilogram of body weight was administered to rabbits by stomach tube. The compound acts only after six to ten hours and even later. Its effect, however, is intensive and may last for six days, whereas massive doses of heparin (12.5 mg. per kilogram) had only a momentary effect. Intravenous administration of massive doses of vitamin K (30 mg. per kilogram of body weight) did not counteract the effect of dicumarol. Doses of from 125 to 375 mg. of "antiprothrombin," a Swedish commercial preparation of dicumarol in tablet form, were administered to healthy men. The effect on the prothrombin level was significant. The compound acted at an interval of from six to ten hours, but its effect was prolonged for from seventy-two to one hundred and twenty hours. An increase in prothrombin for from twelve to fourteen hours resulted in several instances from oral administration of from 100 to 200 mg. of vitamin K but was followed again by a sudden reduction of the prothrombin, which was compensated for later on. This increase in the prothrombin level occurred at an interval of from three to ten hours after the administration of vitamin K. Untoward reactions such as vomiting or diarrhea, abdominal pain associated with rise in temperature and acceleration of pulse for several hours occurred within two hours after the administration of "antiprothrombin." The administration of from two to three single doses of 125 mg. after meals may reduce these untoward reactions. Eleven other coumarin derivatives were tested on rabbits, but the duration and the intensity of their effects did not equal those of "antiprothrombin."

22:221-244 (March 13) 1943

*Sudden Reduction in the Number of Leukocytes After Intravenous Injection of Heparin in Rabbits and in Man: Its Significance for Blood Transfusion. P. Jucker.—p. 221.
Results of Cutaneous Reaction in Typhus. G. Bischoff.—p. 227.
Demonstration of Antisulfonamide Effect in Human Serum After Administration of Procaine Hydrochloride. H. Stöcker.—p. 230.
Study of Cooked Serum Test According to Kürten. Charlotte Marquardt.—p. 232.
Study of Pathogenesis of Stomach Ulcers. G. Hetényi and I. Kalapos.—p. 234.
Adie's Syndrome. A. Werner.—p. 237.

Leukopenia After Heparin Administration.—According to Jucker, leukopenia occurred in both rabbits and man after intravenous injection of heparin. The reduction in the number of leukocytes was manifest within three to four minutes. The polymorphonuclears were more affected than the lymphocytes. In the majority of the cases the initial number of leukocytes recurred within six to ten minutes, but leukocytosis may occur occasionally. The leukopenia which resulted in the rabbits from the rapid administration of large doses was more severe than that from the slow administration of smaller doses or from the slow administration of equal doses. The increase in the number of leukocytes recurred independently from the absolute amount of the administered preparation. It is suggested that this phenomenon is the same as that observed after the administration of other high molecular bodies such as glycogen, acacia, gelatin, methyl cellulose, albumin or peptone. The author mentions the theory of Fåhraeus and Vejlons, according to which reduction of the suspension stability of the blood is the cause of leukopenia. The leukopenia produced in man was less severe than that in rabbits and resulted from such small doses of heparin as 0.12 mg. per kilogram of body weight. There were no allergic reactions when pure heparin preparations were employed. The drop in blood pressure was not pronounced (about 5 mm. of mercury). Heparin should not be given to blood donors in cases in which transfusion aims to increase the defensive power and the volume of the circulating blood or to combat anemia. Administration of heparin is not advisable in cases of agranulocytosis. It may be safe to proceed with blood transfusion after the heparin treatment when the leukocytes have once more risen to safe levels. Heparin treatment is contraindicated in patients with deficient leukopoiesis.

Book Notices

Rehabilitation, Re-Education and Remedial Exercises. By Olive F. Guthrie Smith, M.B.E., C.S.M.M.G., T.M.G., Principal of the Swedish Institute, London. With a foreword by Lord Horder, G.C.V.O., M.D., F.R.C.P. Cloth. Price, $6. Pp. 424, with 273 illustrations. Baltimore: William Wood & Company, 1943.

Reconditioning and rehabilitation are rapidly becoming established as scientific branches of medicine. The main objective of the book is to draw attention to the extraordinary value of reeducating joints and muscles that have been incapacitated through injury or disease, by movement when the action of gravity has been eliminated. Exercises of joints should encourage the patient to cooperate in his own cure. The movements are performed entirely by the patient himself, but under the supervision of a skilled operator.

Rehabilitation covers the whole range of treatment of the injured person from the time of accident to the point at which his condition is restored to the pre-accident state, or until the fullest possible restoration has been effected. One of the first steps in rehabilitation is to awaken the will to recover and to obtain cooperation. From the first day in the hospital the patient's mind is turned toward improvement. Unless absolute rest is necessary he is called on to exert a conscious effort on his own behalf every day. His interest in inducing the return of power by his own perseverance must be stimulated and encouraged. After the cooperation of the patient has been obtained, his actual treatment will be the sum total of the coordinated activity of a team of experts, medical and physical therapeutic, whose work will not end until he is fit for discharge and normal work. The physical therapist's part in this coordinated plan is ever enlarging in scope. In recent years its growth has acquired tremendous momentum. Thus muscular activity carefully graded to suit each stage of recovery is the basis of the physical therapist's contribution to rehabilitation. Every new activity is a point gained, and it is by the accumulation of such points that progress is made.

In this book will be found a series of rehabilitation exercises and methods for the reeducation of muscles which have lost some or all of their function. The methods described have been adopted by the ever increasing number of rehabilitation departments in the Ministry of Health as well as by the larger teaching hospitals. Treatment is based on a combination of three principles—psychologic, physiologic and mechanical, each requiring a definite technic. Although apparatus is extensively used, it is recommended that its use remain individual and that the exercises not be allowed to degenerate into mechanical movements. Active movement carried out under supervision is the only safe treatment for recent injuries. It is only by voluntary movement that restoration of function can be achieved. This is true also when dealing with advanced rehabilitation exercises; these must be carried out under voluntary power, the muscles acting against resistances which are continually graduated in strength. Strenuous exercises can be disguised in many ways as games or some useful occupation, such as digging or chopping wood.

The existing gaps in physical therapy appear to be due to various causes: (1) to certain limitations of the Swedish system, on which British physical therapy is grounded; (2) to an old prejudice against "apparatus"; (3) to the lack of that class of work designated as "self activated." One of the chief limitations of the Swedish system is that the operator tends to work on, rather than with, the patient. One may expect, therefore, to see the pendulum swing sharply in the direction of hard exercise. Such work will take the form of outdoor occupations, games, physical training of a strenuous type and persistent, careful muscle training against resistances. Lack of "self-activated" work has been the most serious gap for two decades. A wave of electrical thought and apparatus swamped active work and forced it into a secondary place; thus it has come about that the usual practice has been to combine massage and electricity and to add a few exercises to complete the treatment. A reorientation is taking place, and the emphasis is now on progressive activity rather than passivity, while making full use of combined treatments and all the valuable electrotherapeutic knowledge that has been acquired. The training in physical therapy, while continuing on the old sound basis, now incorporates new methods so as to fit in with a more strenuous type of work required by the modern conception of rehabilitation. Simple appliances aid rhythmic movement and also have the advantage of assisting relaxation, especially that reciprocal relaxation of the antagonist muscles which is so important after traumatism. Apart from these factors there is the underlying aspect of increased self respect and improvement in morale which comes to patients who feel that they are cooperating in their treatment and consequently a stirring up of hope, of better health, which will promote better functioning.

A number of distinguished men and women have contributed chapters on their specialties, thus enabling the scope of modern physical therapy to be presented in a way which would have been impossible for a single writer to express. Dr. J. B. Mennell is given special consideration for his chapter on manipulations. Physical therapists are greatly indebted to him for his brilliant work. Mr. Gerald Rae Fraser presents some interesting photographs for "massage." The supplementary chapters on joint manipulation, recovery after fractures, rehabilitation methods in chest and maternity cases, electrical treatment and occupational therapy, all written by colleagues distinguished in their particular subjects, add greatly to the value of the book and make it a complete textbook on the subject. This book is of real value to all physical therapists, to all orthopedic and traumatic surgeons and especially to military surgeons.

Hipertensión arterial nefrógena. Por Eduardo Braun-Menéndez y otros. Cloth. Pp. 475, with 93 illustrations. Buenos Aires: Librería y Editorial "El Ateneo," 1943.

The authors are distinguished contributors to the study of renal hypertension. As the title indicates, the survey is principally concerned with this topic, although discussions of other modes of experimental hypertension and of clinical hypertension are included. The book is completed by an extensive and excellent bibliography, an index and an appendix which details the special biochemical methods used in their own investigations.

The authors state in the introduction that "in evaluating results, which are sometimes contradictory, we have taken into account, apart from the proof—which is the essential—the authority of those who present it, as manifest in their scientific status and training, their critical spirit and honesty." The concept, however it may be justified as continental or Latin, introduces elements of personal appraisal which are too dangerously subjective to form a part of international scientific method. It leads the authors magisterially to toss the stones of distrust at others, unaware that the mansions of every one's science, including their own, have occasional panes of glass. It flows from this that the book hews zealously to the authors' stream of conviction, discarding in the chapter summaries what does not fit their personal measure.

Thus, their data do not establish the presence of pressor substances of renal origin in the blood in long established renal hypertension; were such substances present, it is far from established by their citations that these are liberated as the result of renal ischemia. Still, it is stated that "experimentation . . . has proven that it [renal hypertension] is due to liberation of pressor substances of ischemic origin" (p. 248) and the question is begged again in the chapter heading "Renal Hypertension Due to Renal Ischemia."

Studies are quoted which prove that while renal arteriolar sclerosis is common in the late and fatal stages of hypertension it is not nearly as common in earlier stages of the disease; but the authors state that "it is now accepted that in essential hypertension there exists from the outset a certain degree of renal arteriolar sclerosis," fitting the conclusion to their concept but not to their evidence. Minor inaccuracies occur in the review of renal function; thus, it is not true that glomerular filtration pressure necessarily follows the levels of arterial tension (p. 43) or that glomerular efferent arteriolar constriction must always increase filtration fraction above the normal (p. 45). The increased sensitivity of renal hypertensive animals to a variety of pressor drugs is not "an established fact" (hoche seguro) (p. 58) but rather a very variable observation. The "staugshochdruck" of congestive heart failure is attributed to renal venous stasis and resultant ischemia with release of humoral pressor agents (p. 286) which are functionally independent of

the nervous system. This view is not reconciled with the claim that renal denervation abolishes hypertension due to experimental renal venous compression (p. 77).

The clinical discussion is weakened by the suggestion that acute glomerulonephritis is a state of acute febrile infection and by a tabular comparison of clinical, essential and experimental renal hypertension, which overemphasizes their similarities as in its suggestion that the response to thoracolumbar sympathectomy is equally insignificant in the two conditions.

This is a useful manual of reference or bibliography for those students of hypertension who are not content with what must still remain arbitrary opinions; others may be misled by the force and clarity of the highly specific presentation. The authors deserve more than ordinary commendation for their splendid experimental work. The manner they have chosen for its monographic presentation does not do it justice.

Rorschach's Test. I. Basic Processes. By Samuel J. Beck, Ph.D., Head of Psychology Laboratory, Department of Neuropsychiatry, Michael Reese Hospital, Chicago. Foreword by Willard L. Valentine, Ph.D., Head of Department of Psychology, Northwestern University, Evanston and Chicago. Cloth. Price, $3.50. Pp. 223, with 10 illustrations. New York: Grune & Stratton, 1944.

This volume, which is to be followed shortly by a second one by Dr. Beck covering interpretation problems, presents a lucid, specific analysis of the way in which individual Rorschach responses are evaluated or "scored." The literature to date on the Rorschach method has been notably deficient in providing sufficient standards to make the use of this personality test truly objective and scientific. The lack of norms established from accumulated data has necessitated every worker to form his own standards from his particular experience and the theoretical considerations described by the leaders in the field. Thus there was much room for variation in the scoring process basic to the personality interpretation. After employing scientific experimental procedure Dr. Beck has written a technical manual replete with countless examples showing how the psychologic determinants of Rorschach responses are decided and their relative weight. A frame of reference is established for the accuracy of form perception, and there are detailed descriptions of various types of movement, color and light determined responses. One of the unique contributions of this book is the chapter on the organization activity, wherein the author places a relatively unexplored significant mental process on a statistical basis. This manual should enable much wider use of the Rorschach test as it can be understood by beginners. It likewise can be utilized as a reference book for experienced testers and fulfils a concrete need.

Photomicrography in Theory and Practice. By Charles Patten Shillaber. Cloth. Price, $10. Pp. 773, with 291 illustrations. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd., 1944.

This volume can be included in the few authoritative books on photomicrography. The subject is discussed in simple phraseology, and wherever possible diagrams or photographs are used to illustrate a given point more clearly. Several excellent examples of photomicrography are found throughout the text. Chapter 1 deals with the mechanics of the microscope, a clear understanding of which is so essential to successful photomicrography. Other chapters deal with adjustments and various technics relating to the microscope and the illuminating system, the preparation of the specimen, cameras, photographic technic and other aspects. Of especial value to the teacher of this subject is the list of practical questions which follow all but two chapters.

It is a matter of regret that a chapter on color photomicrography was not included in this volume, since in recent years there has been such great improvement in color photographic processes. The author acknowledges the omission of a consideration of this field as well as of "work with polarized light . . . ultraviolet and infra-red radiation, stereoscopic pictures and other highly specialized fields" and promises to amend by adding "from time to time complete information regarding these and other important branches of microscopy." Truly the material in this book is basic and in many instances can be applied to the specialized fields; however, more specific treatment is desirable and the promised chapters will be of great value, especially to the research physician and the biologist.

Tuberculosis of the Ear, Nose, and Throat: Including the Larynx, the Trachea, and the Bronchi. By Mervin C. Myerson, M.D. Cloth. Price, $5.50. Pp. 291, with 88 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, 1944.

Unless attached to a hospital for the care of tuberculosis, the average laryngologist only infrequently sees the manifestations of this disease. These nevertheless exist and must be constantly kept in mind. The author has had a large experience, and out of a rich clinical background has come this book. It reads easily; much of what has been accepted as fact and passed down through generations of authors is quietly discarded, and there appears as a result the seasoned and considered opinion of a careful and competent observer. As is to be expected, tuberculosis of the larynx receives most of the author's attention. To it he devotes seven chapters, representing about one half of the printed matter of his work. The format is such that headings, easily appreciated by the eye, introduce the reader to the material presented. The author's own statistics from an obviously adequate experience substantiate his statements and there are enough illustrations, all of them apparently new. There follow chapters on tuberculosis of the ear, nose and throat and among others, what is most interesting, a chapter on bronchoscopy in tuberculosis, a field in which the writer has had a great interest. The refreshing candor, the sane clinical attitude and the modesty of presentation of his material by the author recommend this volume to all those who may meet tuberculosis in the special field with which it deals.

Regional Analgesia. By H. W. L. Molesworth, F.R.C.S., Senior Surgeon, Royal Victoria Hospital, Folkestone. Cloth. Price, 8s. 6d. Pp. 90, with 42 illustrations. London: H. K. Lewis & Co., Ltd., 1944.

The author bases the contents of his book on experience with regional anesthesia in 1,500 cases. In 500 of these cases major operations were performed. It is clear to the experienced person that the author has intelligently interpreted the actions and reactions observed during use of local anesthetics and that his statements and deductions are accurate and certainly will be unlikely to change even though his experience has been ten times as great, except in the case of nupercaine. The attention of the anesthetists in the United States might well be called to the author's suggestion that it should not be necessary for the surgeon to have to carry out the local and regional methods of anesthesia; in cases in which regional anesthesia is unsatisfactory and general anesthesia must be resorted to it is especially undesirable. The text is well illustrated and the methods which the author has found to be valuable include surface analgesia, infiltration anesthesia and a variety of nerve blocks, including paravertebral, sacral, infiltration of hematoma in a fractured bone, block anesthesia of the various parts of the extremities, brachial plexus block and various blocks of the cranial nerves. He emphasizes the use of regional anesthesia for operations on the abdominal wall, within the abdominal cavity and on the perineum. He devotes five pages to spinal anesthesia. The small size of the book in no way indicates the breadth of treatment of the subject given by the author. This book will be of interest to both surgeon and anesthetist, especially those in England.

Emergency Surgery. By Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital, London. Fifth edition. Cloth. Price, $18. Pp. 969, with 1,039 illustrations. Baltimore: William Wood & Company, 1944.

This edition is similar to the fourth edition in general plan and setup but has the advantage of containing references to recent developments, notably the sulfonamide drugs and war experience. As was said in a previous review, the prime quality of the book is its practicability. In that respect it should be particularly valuable as a guide to general practitioners who are called on to do emergency surgery. The introduction to this edition is an interesting account of the growth of the book from the first time the author thought of writing it until its final publication. The introduction tells why it is that the reviewer can enthusiastically recommend the procedures outlined as safe, well tried procedures—not always the most recently advocated but those which experience has found useful and which should not be discarded until much time has found the newer ones better.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

MINERAL OIL IN INTESTINE

***To the Editor:*—Is it possible for mineral oil to get through the intestine without some of it being emulsified and saponified? Can it escape some saponification in the intestinal and hepatic alkaline secretions? Would not such soap solution be an irritation and in time sclerose the mucous membrane?** M.D., Wyoming.

ANSWER.—Mineral oil (liquid petrolatum) cannot undergo saponification. Mineral oil is a mixture of hydrocarbons containing only hydrogen and carbon. Fats and fatty oils undergo saponification. Soaps are the alkaline salts of fats or fatty oils. Fats and fatty oils are glycerides or a combination of glycerol and fatty acids. Vegetable and animal oils are natural mixtures of various fats and fatty oils. Their resemblance to mineral oil is in their physical properties, such as consistency and unctuousness.

Mineral oil does undergo emulsification with the water of the gastrointestinal contents. This emulsification by its capacity for holding water and preventing its absorption from the colon and the dilution of the intestinal contents by the oil itself are the physical means by which mineral oil keeps the constipated stool soft.

The use of mineral oil as a laxative does have objections. It interferes with the absorption of fat soluble vitamins. In doses sufficient to make the feces mushy or liquid the intestinal contents do not become formed in the colon but seep distally into the rectum. In the nonconstipated individual with a normal defecation reflex the rectum is not a reservoir of feces. For this reason mineral oil does not correct the altered physiology of constipation.

References:

Morgan, James W.: The Harmful Effects of Mineral Oil (Liquid Petrolatum) Purgatives, THE JOURNAL, Oct. 18, 1941, p. 1335.
Jenkins, G. L., and Hartung, W. H.: The Chemistry of Organic Medicinal Products, ed. 2, New York, John Wiley & Sons, Inc., 1943.

INDICATIONS FOR CIRCUMCISION

***To the Editor:*—Can you give me information concerning the indications for circumcision? It was recently stated in a gathering of women that all enlisted men are circumcised by the Army unless already circumcised. I have observed that all male animals have the glans protected by the prepuce. Why remove it?** Mabel D. Murphy, M.D., Glendale 7, Calif.

ANSWER.—The chief indications for circumcision are a prepuce that cannot be retracted over the glans, a few causes of which are phimosis, paraphimosis and persistent balanoposthitis. In many hospitals circumcision is done almost as a routine procedure. As a result perhaps many foreskins are needlessly sacrificed. On the other hand, this procedure prevents the occurrence of many penile disturbances. It is not true that all enlisted men in the armed forces are routinely circumcised.

STILLBIRTH AND PLACENTAL INFARCTS

***To the Editor:*—A woman aged 28, after going through a normal pregnancy, was delivered at term of a stillborn infant that was known to have died four days before delivery. The pathologist's diagnosis was (1) female stillborn in stage of autolysis and postmortem disintegration, (2) multiple infarction of the placenta, (3) Kline test on placental blood negative and no signs of syphilis present. The mother suffers obvious endocrine dysfunction and became pregnant with difficulty only after treatment with thyroid and synapoidin (a combination of chorionic gonadotropin and pituitary). What are the possible causes of this or any placental infarction? What are the probabilities of a repetition in succeeding pregnancies? What investigation might help to determine the cause of the placental abnormality?** Lawrence H. Lief, M.D., Jamesburg, N. J.

ANSWER.—Not much is known about the etiology of placental infarcts. Nearly every placenta shows infarct formation, but the latter seldom produces any disturbances. However, when the infarct formation is extensive enough to involve a large part of the placental tissue there will result a deficient supply of blood to the fetus with interference in its development or death. Clinically infarcts cannot be diagnosed, but large amounts of infarct formation are associated with nephritis and syphilis.

At present there is no known way of preventing the development of infarcts. Of course, when syphilis is present it should be treated. In cases of outspoken nephritis, pregnancy must usually be terminated in the interests of the mother, else in the latter part of pregnancy in most cases the baby is expelled prematurely and the placenta shows considerable areas of infarction.

This woman should have a thorough medical investigation, and if no disease is found she may safely become pregnant again. In a large proportion of stillbirths the cause cannot be found and most of these women subsequently give birth to healthy children. The thyroid and synapoidin almost certainly had no bearing on the fetal death, but were they really needed for the "obvious endocrine dysfunction"?

ASYMPTOMATIC NEUROSYPHILIS AND TREATMENT WITH TRYPARSAMIDE

***To the Editor:*—A patient with late latent syphilis of eight years' duration received treatment with neoarsphenamine and bismuth for the first two years. The blood and spinal fluid give a 4 plus Wassermann reaction. Organic or mental changes are not apparent. 1. Is it necessary to abstain from food and fluid for two to three hours prior to and subsequent to receiving an intravenous injection of tryparsamide? 2. In such a patient coming twice a week for treatment is bismuth or mapharsen the more effective to use in addition to the tryparsamide? 3. If tryparsamide is not tolerated, what substitute is suggested? 4. How long should such patients be treated with tryparsamides and in general? 5. Is iodide orally advisable in such cases? 6. Is abstinence from food and fluids for two or three hours before and after injection of mapharsen recommended?** M.D., New York.

ANSWER.—A patient with syphilis of eight years' standing and a supposed positive spinal fluid cannot be regarded as having latent syphilis. A major distinction is to be drawn between patients with true latent syphilis (in whom by definition the spinal fluid should be normal) and those with asymptomatic neurosyphilis, in whom the prognosis is vastly more grave. Detailed suggestions for treatment cannot be provided without more details of the spinal fluid examination. It is assumed that there are no symptoms or neurologic evidence of involvement of the nervous system. The examination of the spinal fluid, however, should provide data concerning cell count, total protein content, quantitative Wassermann reaction and colloidal gold curve.

In general, fever therapy is more satisfactory for patients with neurosyphilis, asymptomatic or otherwise, than tryparsamide or any other arsenical drug, whether pentavalent or trivalent.

If tryparasamide is employed, however, the following answers may be supplied to the specific questions asked:

1. No.
2. Tryparsamide should never be given twice a week. There is a serious risk of irremediable visual damage from its use once a week, and this risk is greatly increased if the interval between injections is lessened. If it is desired to use a bismuth compound in conjunction with tryparsamide, the two injections may be given the same day, obviating the necessity for twice weekly visits. Bismuth injections should be given to insure a concentration in the urine of 0.002 Gm. or more of metallic bismuth per day. If, for a reason which does not appear in the query, it seems essential to treat the patient twice a week, mapharsen should be alternated with tryparsamide.
3. If the patient is unable to tolerate tryparsamide, a trial may be made of aldarsone, another pentavalent drug which is said to be less prone to produce visual reactions than tryparsamide. Unfortunately, there are few satisfactory data concerning the effectiveness of aldarsone.
4. This question cannot be answered without further and much more detailed knowledge of the situation.
5. No.
6. Yes.

THERAPY OF BONE LESIONS OF MYELOMA

***To the Editor:*—The recent answer to a query on "Therapy of Bone Lesions of Multiple Myeloma" in The Journal, Aug. 5, 1944, is in disagreement with both the bulk of the literature on the subject and with my experience, based on the study of approximately thirty-five histologically proved cases of multiple myeloma at the Massachusetts General Hospital during the past eleven years (Jacobson, B. M.; Kranes, F.; Gall, E. A., and Lingley, L. J.: The Diagnosis of Multiple Myeloma, to be published). Contrary to the answer cited, roentgen therapy to areas shown to be involved rarely results in relief of pain. And, with the exception of the extremely rare cases of solitary plasmoma, the bone lesions of multiple myeloma are not radiosensitive and do not heal following roentgen therapy.**

Bernard M. Jacobson, Lieut. Comdr. (MC.), U.S.N.R.